



FRIDAY, DECEMBER 13, 1878.

The Quadricycle.

The accompanying cut, taken from a photograph, represents a light hand-car, or "trolley," recently designed by Mr. Ralph Bagaley, of Pittsburgh, and called the "Quadricycle," those in use having been built by the Westinghouse Air-Brake Company, under the supervision of T. W. Welsh, Superintendent. A desire has long been felt for a light vehicle of this description to run on railroads, at comparatively high speed, capable of being propelled by one person without fatigue, and of carrying a light burden. Those now in use were built especially for the Pittsburgh Sunday Leader, as it was unable to reach a number of towns and villages within fifty or sixty miles of Pittsburgh, because the railroads diverging from that city did not run suitable trains early Sunday morning. The machine weighs about 350 lbs.; the rear wheels, or drivers, are four feet in diameter and the pilot wheels two feet in diameter, these latter being purposely made small to keep the vehicle on the track and to enable the rider to lift the front end and drag it from the track quickly in the event of meeting a train. One has been running for a month past between Steubenville Junction on the Pittsburgh, Cincinnati & St. Louis Railway and Wheeling, a distance of 27 miles, which it makes at an average speed of 10½ to 12 miles per hour, carrying 160 lbs of newspapers. Until recently it has been the custom of the driver to bring the machine up grade from Wheeling to Steubenville Junction on a passenger train, on Saturday evening, but he has found that it runs so lightly as to render this unnecessary, and now readily propels it the whole distance of 54 miles. Another one is also in use between Homewood Junction on the Pittsburgh, Fort Wayne & Chicago Railway and Youngstown, O., a distance of 23 miles. It is proposed, as soon as permission can be obtained, to run it on to Warren, O., 49 miles from Homewood. One boy propels it a distance of 29 miles in three hours with about 200 lbs. of newspapers. It is worthy of notice that while the speed capable of being made on stiff up grades will probably not exceed five or six miles per hour, it is greatly increased on levels or down grades; for instance, on one down grade of the Ashtabula, Youngstown & Pittsburgh Railroad it makes a speed by actual timing of 35 miles per hour, the average speed in thirty miles run with a load of 200 lbs. being about ten miles per hour. In addition to its use in delivering newspapers, it is found to be valuable in repairing telegraph lines, track inspection, and for the general use of railroad officers where the use of locomotives is too expensive. For track watchmen it will doubtless be particularly useful, inasmuch as one man can with it do the work of three. Although the mechanical principles are old, the application is new, and so far as we know the results are beyond anything hitherto reported. Efforts are now being made, with fair prospects of success, to still further reduce the weight and cost. A patent has been applied for.

The Accounting Department of English Railroad Companies.

Hitherto we have been considering, with one exception (the Secretary's department), the offices and the men in which and by whom the out-of-doors work of our railways is administered. Now we come to another important arm of the service, without which it would be impossible to get along. If a company, in the management of its business, went on incurring debt, or paying away its revenue without keeping books, it requires no expert to see that bankruptcy and ruin must ensue. There must be a book-keeper and books. There must be accurate balancing of profit and loss, and that on some well-defined principle. The duties of station masters are not confined to the attendance upon passengers, the encouragement of traffic, by civility and attention, the ordering and disposal of the staff. There must be booking of passengers and goods, and the collection of cash, and the due and regular accounting for intrusions. Returns are, therefore, made to the audit office, at stated intervals, and equally regular, though more frequent, transmission of cash to the company's treasury. These financial concerns are, directly, under the control of the company's Traffic Auditor, who is, to that extent, one of the company's book-keepers. This, though an essential and highly necessary and important feature of a company's accounting, has, however, to do only with its revenue, its receipts. The expenditure, or that which must be set against the profits of working, in arriving at the amount divisible among the shareholders, comes within the special oversight and care of the company's Accountant, who, in order to give an accurate account of the actual profits during each half-year, must be supplied with every information affecting receipts and expenditure, from every source. No item of the company's finance may be withheld from him. No secret is too sacred to be intrusted to his keeping. He is responsible for accuracy to the shareholders and the state, and

want of diligence in the fullness of his investigation or care in the acceptance of information supplied to him, may be visited upon his head by the strong and impartial hand of the law. He certifies the half-yearly statements of accounts, and must justify the balance he strikes before independent auditors, who will not be cajoled by mere assertion, but must satisfy themselves of the strictest accuracy.

A company's accounts are divided under the two great general headings of capital and revenue. The capital account embraces the capital authorized to be issued under the sanction of the company's various Acts of Parliament. Generally speaking, the capital consists of stock, and shares, and loans on debenture or debenture stock. It may be interesting to some of our readers if we step aside at this point and describe the difference between the several classes of capital, and the mode of their creation and issue. A company's first creation is usually that of shares, the nominal value of which is fixed at the date or time of their creation, and may vary, according as it is resolved, from £10 to £50 per share. In the case of new companies the shares are offered to the general public with a likelihood of those who are locally interested taking them up. If a company is already in existence, and is creating and issuing new capital, allotments of the new shares are offered, in the first place, to present shareholders in rateable proportions to their holdings of the company's ordinary stock, and under such conditions as to price, whether premium or par, and the amount of the first call, as the company's position and the state of the money market may warrant. The allotment letter indicates the date beyond which the option of acceptance of shares lapses. Up till that date those who intend taking up their lots pay to the company's bankers the amount of deposit per share, and are, thereafter, registered in the company's books as the holders of these shares. In some cases the shareholder prefers paying up in full at once, thus saving the worry and anxiety of calls of uncertain amount at uncertain periods. Care requires to be exercised in the registration of shares, and in the registration of deeds of transfer, that the proper consecutive numbers are noted, as it is not enough that a



"QUADRICYCLE:"

Designed by Mr. Ralph Bagaley.

man be registered as the holder of so many shares, the certificate must bear the particular numbers, otherwise buying and selling and transfer would be next to impossible. This is, however, too obvious to need urging. When the shares are fully paid up, it is expedient to consolidate them into stock, which renders them less troublesome to the holder, be he buyer or seller, and also to the company. For the purpose of consolidation, which is simply the grouping of ten £10, five £20, or two £50 shares into £100 stock, it is necessary, under the provisions of the "Companies' Clauses Act," that the shares shall be fully paid up. Three-fifths of the shareholders present at a general meeting, of which due statutory notice has been given, may then authorize the work of such consolidation. Certificates bearing that the holder of so many shares, numbered consecutively and particularly, is now the owner of stock in relative proportion to the nominal value of his shares, are thereafter issued, and these stock certificates cancel and render void the paper which each shareholder previously held of the company. Holders of stock may sell in the market through recognized members of the Stock Exchange, but the price received for the stock is regulated by various circumstances from day to day, such as the company's present position or its immediate prospects, the condition of the money market, or the operations of speculators on the Exchange. A man may get, as in the case of some of the best railway proprietors, as much as £140 to £150 for his £100, or, as in the case of less fortunate companies, he may get as low as £80. The companies neither reap advantage from the premium prices, nor disadvantage from the prices which are below par—par being the term for stock at its nominal value. In either case the stock is a £100 stock, and the holder is entitled to dividend on that amount.

Loans on debenture or mortgage and debenture stock are a privilege conferred on the companies as riders to their capital powers. Every act of Parliament carrying money powers authorizes borrowing for specific purposes, and under strictly defined conditions, and the issue of debenture stock to replace the mortgages or bonds so issued as they fall due. Mortgages are issued for fixed periods, and at rates of interest varying with the company's position and the state of the money market. Debenture stock, which bears a fixed and perpetual rate of interest, has none of the privileges of other stocks, but, in common with mortgages, enjoys the right to receive interest before these receive dividend.

The raising of capital under these heads involves the keeping of separate accounts in each shareholder's name, and of a register of mortgages and debenture stock, with an entry for every bond and debenture stockholder. In the case of the more extensive companies, these books are kept by the Registrar, but in many cases the Accountant is charged with their management. In any case, the latter officer deals with

the debit and credit of these accounts as an element of his half-yearly balance of the company's financial position.

The capital thus raised is expended on the lines and works for which parliamentary powers were asked and received, and the Accountant's office is the centre to which all details of that capital expenditure are sent for manipulation. These are there classified under such general headings as "Land" and "Works," which comprise all expense incurred in the construction of the line and working stock, which latter includes all plant.

The completion and opening of the parent line or new branches involve the opening of the revenue account. This account is credited with the receipts derived from all sources in working the traffic on the one hand, and debited with all expenses incurred on the other, the balance at the credit of the account at the end of the half-year being the profit divisible among the shareholders.

The capital and revenue accounts, or the company's balance sheet, are made up half-yearly according to forms prescribed by the "Regulation of Railways Act, 1868," and are audited and certified by independent auditors appointed to the duty by the shareholders. In their certificate, these gentlemen must declare that, having carefully scrutinized the accounts prepared by the Accountant, and certified by him, they find them to contain a full and true statement of the financial position of the company, and that the dividends proposed to be declared are bona fide, after charging the revenue of the half-year with all expenses, which, in their judgment, ought to be paid thereout. These half-yearly accounts contain, in the first place, a statement of "Capital Authorized and Created by the Company," detailing the various acts; and the amount of capital authorized to be raised under authority of each. In the second place, a statement of "Stock and Share Capital Created, showing the proportion received." This is made up from the company's principal ledger, and shows the aggregate amounts received from shareholders on account of the stock or shares created, the amounts, if any, of calls in arrears, and the amount of the shares uncalled, with the amount unissued, if any part of the total nominal value of the share remains to be called up, or any

of the total number of shares created remains to be issued at the date to which the accounts are made up. In the third place a statement of "Capital raised by Loans and Debenture Stock"—showing the amounts received at the end of the half-year immediately preceding, classified under the different rates of interest payable—and, similarly, the amounts at the date of accounting, and the difference, either increase or decrease, during the half-year. In the fourth place, the accounts show the "Receipts and Expenditure on Capital Account," as made up from the principal books of the company, all of which are kept by the Accountant. On the credit side of this account we have the total amounts received on shares and loans, and these, together with any other capital receipts, if any, not included in the statements just referred to constitute the capital receipts of the company. On the debit side we have the expenditure, showing separately, that on lines open for traffic, on lines in course of construction, and on working stock, etc., etc., and the balance, if on the debit side, as will at once appear, shows the amount of expenditure in excess of receipts, or, if on the credit side, it shows the amount of receipts in excess of the expenditure—a happy state of affairs for the company. In the fifth place, a statement giving "Details of Capital Expenditure." These details are classified under the following heads, viz: "Land and Compensation," which includes the amounts paid to landed proprietors for land purchased, for lines and works, and to their tenants for loss and damage to crops, etc.; "Construction of Way and Stations," which includes the amounts paid for engineering, for construction, and, generally, for rails, chains, sleepers, and all expenses incurred in the formation or construction of the line and stations; and "Law Charges and Parliamentary Expenses, etc.," which includes all expenses not embraced under the other two heads. In the sixth place there is given a "Return of Working Stock" showing, under classified headings, the number of locomotives, carriages, wagons, and, generally, the number of vehicles used in the working of the traffic and owned by the company at the date of accounting. This statement is, practically, a half-yearly inventory of the company's rolling stock, and it is made up from returns furnished by the Locomotive Superintendent, and other out-door officers in charge of the company's plant. The seventh statement is an "Estimate of further Expenditure on Capital Account," showing what is likely to be required to be expended on new works during the immediately ensuing half-year, and also how much may be needed in subsequent half-years. This statement is made up from information supplied by the company's engineers and others.

The eighth statement gives the "Capital Powers and other assets available to meet further Expenditure," and shows the amount of share and loan capital authorized but not created, the amount of calls in arrears, uncalled and unissued shares created, and any other capital asset which the company may possess available to meet their further requirements. These eight statements exhaust the capital account. Next follows the revenue account, number nine of the half-yearly accounts being the statement with which it leads off. The items on the credit side of this account are made up from returns furnished to the Accountant, chiefly by the Traffic Auditor, and these show the revenue from all sources during the half-year. The items on the debit side show the expenses incurred in working the line or in obtaining the revenue credited on the other side of that account. The expenses are classified under different headings, and show what proportion is chargeable to each department of the service, together with such other revenue charges as compensation paid to passengers injured on the line, and the aggregate of the sums paid for damage to goods in transit, Parliamentary expenses, incurred in protecting the traffic from projected competition, by the opening of new lines and branches in connection with neighboring systems of railway, rates and taxes, passenger duty, etc.

These items are still further detailed under abstracts, in statement number 12, where they are subdivided into the minor classification, cost of wages and materials incurred in working, and wages and materials expended in repairing, etc.

The balance of the revenue account is carried to state-

Contributions.

The Use of the Level in Surfacing Track.

TO THE EDITOR OF THE RAILROAD GAZETTE:

In looking about the country and comparing the track equipment and implements now in general use with those of a few years ago, a marked improvement is visible. It is noticeable, however, that among the "instruments of precision," the use of which is indispensable in the construction and maintenance of a first-class (not to say perfect) track, the level is considered by the average track-man as a nuisance. All track-men are willing to acknowledge that there is a benefit in the use of that instrument in putting up curves and in yard work, but they will dispense with its use on every possible occasion. How this can be, may be a mystery to many; but it should be remembered that there are thousands of miles of road in this country that do not receive the fostering care of an engineer or road master, and on which no rigid system or rules are enforced. On these roads the section foremen are left to take care of themselves. They receive a flying visit now and then from some official who is so overworked in other departments that he has but little time to devote to track repairs, and, in many instances, he would not improve the road any if he did.

There may be two reasons assigned for the limited use of the level: One is that many track foremen consider its use a hindrance to the rapid progress of the work of surfacing, and another, that putting up track without using the level shows their superior skill in that useful art, or, that to use that instrument would be an acknowledgment of a lack of faith in their heads being level. But, as has been previously stated in these columns, there is no man, however great his experience, who can properly surface a track without the use of the level. And there more reasons why its use is important than is generally supposed. It is the popular idea, especially among second and third-rate trackmen, that the principal object in having track on tangents perfectly level is that it carries rolling stock easily and steadily. This is, of course, correct, so far as it goes, but there are other important considerations in this matter. It is, perhaps, well known that the lower rail is subjected to a greater load than the higher. Consequently the lower rail is forced downward or made to settle into the ballast faster than the higher one, and thus the evil, though slight at first, is rapidly increased: and again, the ties being inclined on a track out of level, water finds its way under the lower ends of them, and that side of the road-bed being more soft and yielding than the opposite side, the track very soon becomes a lop-sided affair. In raising a low joint, it frequently happens that to put it up to a level with the opposite one would necessitate the raising of several rods of rail at each side of the one first raised, the latter of which would naturally require a higher raise than any adjoining it. To illustrate further: We will suppose that a piece of track has been thoroughly ballasted and put in good surface by the use of the level, and that from some of the numerous causes of track settling, there is a slight "sag" in one side, of the length of four or five rails. About midway of the sag one joint is down more than the others, causing a marked depression in the track's surface. Now, by raising this joint to a certain height, a tolerable surface would be given, that is to say, "the track is much better than before; the surface is good, with the exception of a 'smooth sag,' and that is of no account." But, as previously stated, the sag will rapidly grow worse, and the proper thing to do is to put the whole sag up to a level. Then, when the Mogul passes that way he will not lurch, and throw the most of his tremendous weight on to the weaker side of the track and crush it into the ballast, for it has been made as high and strong as the other.

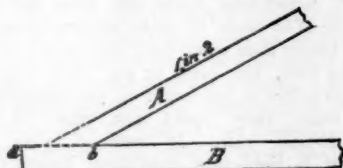
Surfacing track without the use of the level is much labor thrown away; and no matter how poor the company, or how light the traffic, it pays to provide every section gang with a level and make them use it. WM. S. HUNTINGTON.

Wooden Bridge or Roof Joint.

RICHMOND, NOV. 29, 1878.

TO THE EDITOR OF THE RAILROAD GAZETTE:

As you are upon the subject of carpentry, I venture to ask the following very simple question, to which, if they will take the trouble, some of your recent correspondents will no doubt furnish a prompt and satisfactory reply:



What should be the form of joint for combining the tie beam B with the rafter A, in a roof, or bridge of considerable span, say 100 ft., the dimension a b being limited to say 2 ft.?

A SUBSCRIBER.

The Importation of Locomotive Tires and Axles.

A correspondent of *The Bulletin of the American Iron and Steel Association* writes from Washington as follows:

The final determination by the Supreme Court of the United States of the rate of duty on tires and axles, both of steel and iron, gives especial interest to the history of their importation, which was very large for many years. It is not likely that at the present rates of duty and price of steel they will again be imported. The present decision of the Supreme Court affirms the decision of the Court below without giving the terms of that decision; but that was specific in stating that the rate of 3 cents per pound applied to all

locomotive tires, and 2½ cents per pound to all axles, whether of iron or steel.

The first statement of a separate duty on tires and axles was in the act of March 2, 1861, "axles or parts thereof" being then put at 2 cents per pound; and "locomotive tires or parts thereof" 1½ cents per pound. The act of July 14, 1862, added to these rates 1 cent on tires and one-half cent on axles, making both 2½ cents per pound. The act of June 30, 1864, imposed, in lieu of these duties, the rate of 3 cents on tires or parts, and 2½ cents on axles or parts; using the same language as before in describing them.

At this time, 1864, steel began to be used for both tires and axles, but only to a small extent; the English Low Moor and Monkbridge iron being almost exclusively used both in England and in the United States. The following figures, first available in 1864-65, will show how largely iron tires were then imported, and how abruptly they ceased when Bessemer steel came to be used. Axles were never separately stated.

1864-65	3,400,558 lbs.	value \$210,385.00
1865-66	2,575,924 "	" 151,182.00
1866-67	1,216,472 "	" 78,400.00
1867-68	383,592 "	" 18,664.00
1868-69	21,306 "	" 677.00
1869-70	5,817 "	" 295.00
1870-71	500 "	" 13.00

None have been reported as being imported since, the actual importation being of steel, and being charged ad valorem duty as manufactures of steel. Most of these have been charged 45 per cent. duty, but a considerable number came in as shapes or blanks, unfinished, and were charged 30 per centum duty as "steel in other forms," a conveniently evasive clause of the act of 1864.

The first Bessemer axles broke badly, iron showing a service of 120,000 miles to steel 84,000 miles (see *The Bulletin*, Nov. 14, 1866); but both tires and axles of Bessemer steel became at once much cheaper than Low Moor iron, and made their way rapidly in consequence. Starting at \$28 per ton in 1865, they fell off to \$22 and \$20 in 1868-69, and to \$18 in later years, now being \$11 to \$15 only, and Siemens-Martin tires and axles are nearly as low. Low Moor were \$32 to \$38 per ton and declined slowly, being in 1874 \$24 to \$32, according to size, for tires, and \$22 10s. to \$29 10s. for axles. They are now much higher than Bessemer, being \$19 10s. to \$25 10s. for both tires and axles. Crucible tires were always much higher than either, being in 1866-67 \$65 to \$80 per ton for Naylor's, and \$80 to \$120 for Krupp's. They continued at \$60 to \$120 for many years, and are now at their lowest—\$36 to \$40 per ton for Krupp's.

Weldless or rolled tires were first made in England in 1865, and became general in 1866-67 for Bessemer. The iron tire blanks were longer in use, but in 1868 the use of weldless tires was almost universal. In the United States the Nashua Iron & Steel Company began to roll weldless tires in October, 1867, heating them in a Siemens regenerator. The machinery for this purpose was novel, and considered an achievement both in England and the United States.

The case now decided was originally brought in the Circuit Court at New York in 1876, on eighteen importations of "tire forgings" and "axle forgings" from Krupp's works in Essen, on which the excess of duty at 45 per cent. over 3 cents per pound varied from \$60 to \$350 in each case, the entries being in 1872 and 1873. As the specific rate claimed is \$67.20 per ton, the price on which the ad valorem was calculated must have been more than \$30 (\$150) to give any excess at 45 per cent. It was probably \$32 to \$35, the then current price of Bessemer, but very soon after the case came on, or in June, 1875, the price of Bessemer and Siemens-Martin products fell much below \$30 per ton, making the specific rate of 3 cents much more than the ad valorem of 45 per cent., and it has so continued. Now the cost of importation would be for English tires, at \$11=\$53.53, duty \$67.20: total \$120.73; for English tires at \$15=\$73.00, duty \$67.20: total \$140.20. For Krupp's-Bessemer, 19½ marks the 100 kilos=\$46.41, duty \$67.20: total \$113.61; Siemens, 22 marks the 100 kilos=\$52.36, duty \$67.20: total \$119.56; Crucible, 40 marks the 100 kilos=\$95.20, duty \$67.20: total \$162.40.

The sterling equivalent of Krupp's prices for Bessemer and Siemens-Martin products is \$9 to \$11 per ton only, but it is apparent that they cannot be imported under the duty of 3 cents per pound. Nor can "axle forgings" in any form, or of any material, come in at the duty now declared of 2½ cents per pound. The cost of the axles is but ten per cent. less than weldless tires of any material; the Low Moor axles are in fact quoted as high as tires, and "double-crank axles" are nearly double the price of ordinary.

Transportation in Congress.

In the Senate, on the 4th:

Mr. Matthews, of Ohio, moved to take up the Texas and Pacific Bill.

Mr. Morrill, of Vermont, said this subject was too important to be pressed the first week of the session.

The motion was rejected by a rising vote: yeas, 19; nays, 23.

Mr. Matthews then gave notice of various amendments he would submit to the bill, which propose to strike out the part requiring the road to be built on or near the thirty-second parallel, and provide that a failure to construct the road at the rate provided (fifty miles per annum) shall work an absolute forfeiture of all right to the guarantee of the government.

In the House, on the 5th:

Mr. Finley, of Ohio, introduced a bill limiting the rates to be charged for the transportation of freight and passengers over the Omaha bridge.

In the Senate, on the 9th, Mr. Windom, of Minnesota, submitted the following:

Whereas, It is alleged that the United States patent system which was intended for the encouragement and protection of meritorious inventors, has become, in many cases, the instrument of dishonest speculators and unscrupulous assignees, agents and attorneys, whereby the grossest injustice and most intolerant oppressions are perpetuated in the name, and by the authority, of the government; therefore,

Resolved, That the Committee on Patents be instructed to consider the expediency of substituting some other mode of compensating inventors in place of the existing monopoly and royalty system, and that, pending such investigation, the said committee be further instructed to inquire what amendments, if any, may be necessary to give adequate protection to the public, and to prevent further unjust and odious exactions under the patent laws, and that the said committee report by bill or otherwise.

Mr. Windom said no one appreciates more highly than himself the skill of the American inventor, and in proposing a radical change in our patent laws he waged no war upon the inventors. The proposition which he submitted was in the interest of the meritorious inventor as well as that of the public at large. The people of this country are quite willing to concede a reasonable compensation to inventors, but are not in favor of granting monopolies. He argued that the patent laws seemed to have been framed wholly in the interest of the holder of the patent. Under existing laws and usages mistakes are inevitable. In the present

crowded condition of business in the Patent office, and owing to inadequate appropriations, examinations are often made by some half-starved poor clerk who knows nothing about inventions.

Mr. Windom made no complaint against the Patent Office. It was the system which he condemned. He spoke of instances where he believed that wrong had been committed. He said that our patent laws are sadly in need of some radical change. It is high time Congress addresses itself to providing some remedy.

No action was taken on the resolution of Mr. Windom.

In the House on the 11th:

The bill to regulate inter-state commerce and prevent discrimination was taken up, and, after some debate, was passed by a vote of 139 to 101. The bill makes it unlawful for any persons engaged in the transportation of property by railroad from one state to another, or to and from any foreign country to receive any greater or less amount of compensation from one person than another for like and contemporaneous service. It also makes it unlawful for any persons so engaged to allow any rebate or drawback on shipments made by them, or to enter into combination with another carrier to prevent the carriage of property from being continuous, and prohibits the pooling of freights. The penalty affixed is the payment of a sum equal to three times the damage.

RAILROAD LAW.

Vermont Railroad Laws.

At its recent session the Vermont Legislature passed several laws relating to railroads. Among them was the following amendment to the general railroad law.

Sec. 1. The act entitled an act to authorize the formation of railroad corporations and to regulate the same, approved Nov. 20, 1872, shall be so construed as to authorize the building and operating of railroads of any length, whether more or less than 20 miles, anything in section two of said act to the contrary notwithstanding; and where it is less than 20 miles in length, the Secretary of State may file and record the articles of association when \$5,000 per mile is subscribed for each mile of road proposed to be built.

Sec. 2. This act shall take effect from its passage.

Another act, general in its terms, authorizes railroad companies to issue bonds to be secured by mortgage, such bonds to bear not more than 7 per cent. interest and to have not more than 30 years to run.

Another law, which might be profitably made applicable to loafers of full age, is as follows:

Sec. 1. Any minor boarding any railroad train on its arrival or departure, or the making up of railroad trains at any station, or found loitering about any yard or station on the property of any railroad company, without permission, shall be liable to pay a fine not less than \$1 and costs and not exceeding \$5 and costs, or imprisonment in the county jail not less than five days nor more than 30 days, and it is hereby made the duty of all station agents of yard masters or any officer authorized by law to make arrests, to arrest any minor violating the provisions of this act and bring him before some justice of the peace in the town where the offense is committed, and said justice is hereby authorized to enforce the provisions of this act.

Another act authorizes towns to issue new bonds for the purpose of refunding or consolidating their unpaid bonds or notes issued in aid of railroads. The new bonds must not exceed the old ones in amount and must bear no higher rate of interest, and the issue must be authorized by vote in a town meeting called for the purpose.

Reorganizing Railroads in Vermont.

The Legislature of Vermont recently passed the following general law:

Sec. 1. In all cases where two or more mortgages on undivided portions of any railroad or any part thereof, made by any railroad company to secure the payment of bonds, shall have been foreclosed and the legal title to the mortgaged premises vested in the mortgagees, according to their respective interests, the holders of a majority of the bonds under each of said mortgages may form themselves into a corporation for the purpose of owning or maintaining and operating such railroad or part thereof for public use in the conveyance of persons and property, upon such terms and conditions in regard to their respective interests as they may mutually agree upon, and substantially in the manner provided in chapter twenty-eight of the General Statutes, so far as the same are applicable to such case; and all holders of bonds under either of said mortgages, who shall not join in such arrangement and become parties thereto, shall be entitled to all the rights and remedies provided in said chapter twenty-eight, or otherwise in law or equity; and such new corporation so formed shall have all the rights and be required to perform all the duties of a corporation, in the same manner as if formed by bondholders under a single mortgage.

Sec. 2. This act shall take effect from its passage.

Attaching Goods in Transit.

In Thomas against the Western Railroad of Alabama, the Supreme Court of Georgia held that an action would not lie against a railroad company whose servant obstructed an officer in levying an attachment upon goods loaded on one of the company's trains, and ran the train with the goods out of the state, thus defeating the attachment. The Court, remarking that they knew of no case exactly similar, referred to the rule applied against an action for damages for aiding a debtor before process of seizure has issued to remove his property out of a state to the prejudice of a creditor, and to the rule that an officer who has arrested a debtor is not excused for his rescue by a mob. Following the suggestion of these rules, the Court held that as the Sheriff has power to command assistance and overcome resistance, it is his duty to do so, and the remedy of the attaching creditor, if he fails to do so, is against him, and not against those who obstructed or resisted him. They may be punishable criminally, but are not liable to a civil action at the suit of the creditor.—*New York Register*.

Stop-Over Checks.

In Breen against the Texas & Pacific Company, the Texas Supreme Court lately held as follows:

Railroads may prescribe such reasonable regulations in relation to passengers stopping over at intermediate stations as may be necessary to secure such passengers and railway companies from loss or inconvenience growing out of such a practice.

Where a passenger refuses to pay his fare the agents of the railway company may put him off their train at any station on such railroad, and may use all necessary means to accomplish such object.

The individual check of one conductor will be no evidence to another that the holder has paid his fare to a given point.

—Mr. L. J. Powers, who was last week elected Mayor of Springfield, Mass., and is a successful business man, began life as a newsboy on the Connecticut River road.

—Mr. A. W. Wright has resigned his position as Chief Engineer and General Superintendent of the Havana, Rantoul & Eastern road, to accept the office of Superintendent of track and construction for the north Chicago City Railroad.



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S. WRIGHT DUNNING AND M. N. FORNEY.

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EDITORIAL ANNOUNCEMENTS.

Passes.—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

EXTENSION OF THE NEW YORK APPORTIONMENT.

The two short resolutions passed at the meeting of the trunk-line presidents at last have, it seems to us, an important significance. The extension of the contract for dividing west-bound traffic from New York for five years in itself is important. It not only indicates that the trunk lines are satisfied that their apportionment has been advantageous to them during the seventeen months that it has been in operation, but also that it has proven itself so fitted to meet the various difficulties that arise—and in roads like the trunk lines, which interchange traffic with a vast number of other roads, the difficulties are numerous and sometimes grave—that it can be depended upon to work satisfactorily hereafter. There is no question that some of the lines (perhaps we could say all of them) have been dissatisfied with the share of the business that they have received, but the renewal of the combination seems to us to prove that the managers are at last fully convinced that each road can make more profit on the business with the smallest share that ever would be assigned it, than with the largest amount got by struggling with others for it.

What is likely to be most far-reaching in effect in the proceedings of this meeting is the fact that it established what is substantially a court for the decision of questions which hitherto could only be settled by unanimous consent. The rock on which negotiations for pools have commonly split is the assignment of proportions. It is not to be expected that competing lines should agree as to their respective shares of a business which they have competed for. Each is always hoping to get more, planning to get more, confident that some new plan, some improvement, some better connection is about to bring it more. If you appeal to the past, the rival has always diverted traffic by cut-

ting rates. Most men have an exaggerated idea of the value and prospects of their own property or business. In many or most cases hitherto it has been necessary for the railroads to resort to arbitration. The resolutions of the trunk line presidents provide for a permanent arbitrator—rather a judge, who, occupied constantly in questions of this kind, and with the facts that bear upon them, would naturally, even if he had before no extraordinary qualifications for such work, become an expert in such cases.

Henceforth, during the five years for which the contract is made, a failure of the trunk line presidents to agree will not put an end to the apportionment. And as if to emphasize their submission to such a tribunal and their confidence in their judge, they did not even determine the proportions in which the business shall be divided at the beginning of the five years' contract. The very first step is a resort to the arbitration provided for in the contract. There was, months ago, a demand by one road for a larger percentage; the matter was then investigated and reported upon by Mr. Fink, the Commissioner; his report was rendered and discussed in his presence, so that he has heard all the arguments that all the parties concerned have been able to bring forward. Now the question is remitted to him, and it depends absolutely upon his decision what proportion of New York through freight each of the trunk lines shall carry henceforth until another application for a change is made, heard and decided.

The greatest difficulty in establishing a court of this kind, next to that of getting all of the companies to agree to submit to them, is the lack of judges. The work is peculiar and one in which very few indeed have ever had any experience. And something more is needed than knowledge and ability. The parties coming under his jurisdiction must know the man, and have the fullest confidence in his fairness and integrity as well as his capacity. They require of him qualities which are not likely to be brought prominently to notice in the intercourse of railroad officers, but which there is constant occasion to manifest in such positions as Mr. Albert Fink and Mr. Virgil Powers have for some time occupied. It does not follow that because a man has approved himself a distinguished railroad manager or engineer that he will be a good judge. We like to try him in such a position before we give him the authority of a court of final resort.

The Trunk Line Commissioner has by a natural process been resorted to as a sort of general arbitrator for questions between railroad companies entirely aside from those which relate to the work for which he is employed. Knowing him to be occupied with such questions and to have made a special study of them, and having confidence in him, when difficulties arose it was natural to apply to him to decide them, and the relations of the trunk lines with the Western roads being so intimate, he has been called on constantly to lend his help in the efforts to settle the east-bound business. The efforts of the trunk lines to prevent the demoralization of this business may result in the establishment of a court for this business as well as the west-bound, though in this case the steps so far taken tend toward the formation of a general council rather than a court, consisting of representatives of all the interests concerned, who will be at all times ready to take up and consider any complaints that may be made.

Neither the owners of our railroads nor the community which they serve will be able to get the full benefit of them until the whole railroad system is worked as if it were a single property. That time, very likely, will never come; but the improvements which can be made in economy, uniformity and stability through combinations must be made by approximating this condition—by recognizing the existence of all the lines, and endeavoring so to arrange traffic as to make the best possible use of them. Heretofore the conduct of railroad companies sometimes seems to have been based on the supposition that a rival road might be driven from the field. It is something to have been convinced of the impossibility of this, of the absolute necessity of acknowledging the existence of all other roads and accepting some mode of living with them.

THE EAST-BOUND FREIGHT TROUBLES.

The news from the West is not particularly encouraging. There has been cutting at Milwaukee and apparently at some places south of Chicago, as the Indianapolis grain merchants are complaining that the grain all goes by them. But the merchants' complaints there and at Chicago are evidence that in some places rates have been maintained. And the long delay of the railroads in meeting at Chicago and elsewhere the reductions made at Milwaukee indicates that they expected that the result would be a restoration of the rates everywhere instead of a general railroad war.

What seems most remarkable in a contest of this kind is the fact that among those who take part in it, and those who are really most affected by it, are precisely those who most protest against it, and have shown by their conduct in regulating the traffic in the other direction that they are in earnest in their protests, that they honestly and earnestly desire to maintain rates, and will not insist upon trifles which stand in the way of harmony. It is probably a puzzle to nearly everybody outside of railroad business that when the trunk lines control the roads from the seaboard to Chicago, Indianapolis, Cincinnati and the like, they are not able to insist upon receiving such rates as they are unanimous in desiring upon part or the whole of the through traffic passing over those roads to the East, as they do successfully on that passing over them to the West. And it does seem rational that if there is a contest between roads from St. Louis to Indianapolis, the reduction of rates should fall wholly upon that part belonging to those roads, and that the lines east of Indianapolis, three or four times as far, should not have to share it. At this day there are trunk lines receiving their proportion of a 50-cent rate on flour, though they never consented to take less than 70 cents, and are indignant at the conduct of the connection that has reduced the rate.

To railroad men the complications which prevent the trunk lines from refusing to accept less than a definite sum on east-bound freight over their own lines are better understood, and there is no question but that they form an obstacle, though it is by no means certain that it is an insuperable one. But it must be remembered that there has been a change in the circumstances since last year. Then the control of the trunk lines was less complete. The Michigan Central was independent, and only the Pennsylvania and the Baltimore & Ohio controlled all their Chicago connections. If then it had been agreed to maintain full rates on east-bound freight over the trunk lines east of Buffalo, Pittsburgh, Wheeling and Parkersburg, the roads controlling lines to Chicago would have had the advantage. The Michigan Central and Great Western could make reductions only on their 513 miles of road, while the Fort Wayne could substantially charge its reduction against the rate all the way to New York, as whatever it loses is virtually the loss of the Pennsylvania Railroad Company, and the same was true of the Baltimore & Ohio. But though the Michigan Central has become a Vanderbilt road, neither its losses nor the Lake Shore's are shared by the New York Central & Hudson River Company, and of course not by the Erie. There is no lease or guarantee, and what the Western road loses falls wholly upon its own shareholders.

But this is not a reason why the trunk lines should not maintain rates, if they can, as far west as their leased and allied lines extend. It does not seem possible that they cannot do something. At least they should be able to prevent conflicts from beginning at the places where they control all the outlets. In this recent case of cutting on Milwaukee shipments, it is said that 25 cents has been taken instead of the regular rate of 35 cents. Here there are two lines in Michigan which the trunk lines do not control; but they ought to be able to maintain rates east of Detroit and Toledo, and we may be sure that the roads across Michigan would be slow to make a reduction of 10 cents if they had to deduct the whole of it from their share of the regular rate, which is only about that amount. And they would not need to. The competition can be just as well carried on with small as with large reductions. The only difference is that the end is reached sooner where the amount that can be reduced is small. When the contending roads can have the whole through rate of 35 cents to make reductions on, they may go on longer than when they have only their own share of the rate, ten cents or so. They have been known to go as low as ten cents on the through rate, and at least they could not take 15 cents from a 10-cent rate. If railroad wars must continue, it is important that some means should be contrived by which the contending parties only will have to pay the cost. Now when two or three outlying members of the railroad system come to blows, the tendency is to set all their neighbors, though perhaps all the time the best friends in the world and without the shadow of a grievance, to cutting each others' throats. This is "solidarity" with a vengeance, from the consequences of which it is desirable to be extricated.

But it is really due to this same "solidarity" or necessary close interconnection of railroad interests, and while it may be worth while to provide some means to lessen the injury that comes from railroad wars by limiting the field of hostile operations, it onl

makes it more important to guard against the wars themselves.

One thing manifest this season has been the extreme difficulty of getting anything practical done at the same time that everybody seemed and probably was anxious to make any arrangement whatever to maintain rates. And really the difficulty with regard to east-bound business is enormous. There are scores of companies interested, with headquarters scattered all over the West. To get together an adequate representation at rare intervals to determine important questions concerning a permanent future policy is extremely difficult; how much more so to settle a question that arises between two days. It hardly seems possible that the troubles of the past few weeks, which may easily result in ruining the whole winter's through business eastward, could have become serious had it come before all the parties concerned when assembled together.

If representatives of all the roads concerned, east as well as west, could be convoked any day to listen to a complaint or settle a difference, having full authority to bind their roads in such matters, they would hardly permit matters to reach the condition that now prevails in the West. Some such permanent council, with limited numbers and full powers, having offices in one city so that they might be got together at short notice, seems to be needed, especially at this time. If the proposed pools in the West were all made and in good working order, there might be no use for such a council—a general legislature for the railroads concerned, as it were—though it also might then be indispensable; but meanwhile, something of the kind is needed—something which can at any time hear, consider and decide the questions which are constantly arising between companies, and which now sometimes do not get settled at all until irreparable damage has been done.

Diverting Traffic from Chicago.

There has been much complaint at Chicago recently that by the conduct of the railroads traffic, especially in grain, which would otherwise go to that city, has been diverted through or around it. The conduct of the railroads in this case means the maintaining of the regular tariff on shipments to Chicago and from Chicago, while cutting rates is practiced on shipments from Milwaukee and from some interior points through to the East. Discrimination is what is complained of, not perhaps discrimination of a Chicago road against Chicago (though that may be), but somewhere in the whole railroad system that serves the Northwest such a difference of rates in favor of some other places that Northwestern freight can get to market cheaper by many of them than by way of Chicago. It makes no difference to the Chicago merchants by whom or how these differences are made, whether by Chicago roads giving lower rates to Milwaukee than to Chicago, or by Eastern roads making lower rates from Milwaukee to the East than are made from Chicago to the East. What they require is to be put upon an equal footing with other Western markets in any way. If this is done by putting up the rates from the other place to the regular standard, they will probably be satisfied; but if that cannot be done, then they will insist that the Chicago rates should be reduced until the equilibrium is established, and the Chicago roads will doubtless, in time, have to submit—will, indeed, take such action of their own accord; for they do not wish to lose traffic any more than the merchants wish to lose trade. They delay because they hope that the settlement will be made in the other way; that is, by leveling up instead of leveling down the rates—bringing the places which are cutting to a maintenance of regular rates, instead of inaugurating a general railroad war.

It is not always easy to learn whether traffic is being diverted from one place to another by artificial means. There are other causes than discriminations in railroad rates that modify the currents of traffic. And the effect of well-established discriminations is often exaggerated—as often by railroad men themselves, perhaps, as by the public. The tendency is, or has been, to be over hasty in "meeting" cuts by competitors, and agents sometimes seem panic-stricken because of the loss of half-a-dozen car-loads of freight. To investigate the matter of a diversion of business from one market to another, we should be able to compare the quantities of the various commodities arriving for sale at each place in successive weeks. We have no means of ascertaining that for the Northwestern markets, but have investigated the course of the grain movement, which, we give warning, is an unsatisfactory guide, because, it is not what goes through a place but what is bought, sold and handled there which benefits it. Chicago gets no more benefit than Calumet or Yonkers from a million bushels of wheat shipped from Min-

nesota directly through Chicago by rail to New York. It is a matter of indifference to the merchants if all such shipments go by Peoria or the Joliet Cut-off. And we are unable to say how large a part of the grain receipts reported were of grain in transit. They did not, however, include shipments to the East from Milwaukee by way of Chicago.

The percentages of the aggregate receipts of grain of all kinds at each of the eight leading Northwestern markets for the seven weeks ending with Nov. 30 this year were:

	Week ending—							
	Oct. 19.	Oct. 26.	Nov. 2.	Nov. 9.	Nov. 16.	Nov. 23.	Nov. 30.	
Chicago.....	49.0	47.4	51.4	50.9	43.0	44.3	42.5	
Milwaukee.....	11.3	12.7	10.5	12.6	13.6	17.8	19.3	
Toledo.....	10.2	11.8	10.6	10.7	11.6	12.7	10.7	
Detroit.....	7.6	6.2	4.1	4.7	4.7	4.8	3.8	
Cleveland.....	2.4	2.0	1.3	1.5	1.2	2.4	3.8	
St. Louis.....	13.1	13.5	13.7	15.9	16.9	14.0	15.1	
Peoria.....	4.5	6.4	5.7	3.7	3.2	4.0	4.8	
Duluth.....	1.9	2.7	5.8	
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

A decrease in the proportion of the business passing to or through Chicago is certainly observable, amounting from the last week of October to the last week of November to nearly 9 per cent. of the total business, and to more than one-sixth of Chicago's proportion. The places which have gained most are Milwaukee (very nearly as much as Chicago has lost), Cleveland and St. Louis, the two latter not enough to occasion any remark. Peoria, of which there has been some complaint, had a larger proportion in the first three than in the last three of the seven weeks.

The proportions received at Chicago and Milwaukee taken together have varied as follows in the seven weeks:

	Week ending—							
	Oct. 19.	Oct. 26.	Nov. 2.	Nov. 9.	Nov. 16.	Nov. 23.	Nov. 30.	
	60.3	60.1	61.9	63.5	56.6	62.1	61.8	

There is reason to expect a falling off in the proportions arriving at these places near the close of November and later, because the close of navigation reduces them to an equality with the inland markets, whereas with the lakes and canals open they have a cheaper outlet to the East than those places further south which must ship all the way by rail. Evidently grain that might go from Springfield to Chicago when the lake and canal rate is but 10 cents a bushel from Chicago and the direct rail rate from Springfield to New York is 20 cents a bushel would be less likely to go there when the rate from Chicago is 21 cents and from Springfield but 23 cents.

The chief trouble seems to have been at Milwaukee, which is simply the outbreak of an old one which has been quite common in winter. The Michigan roads which receive by steamboat from Milwaukee—that is, the Detroit, Grand Haven & Milwaukee and the Flint & Pere Marquette—claim the right to make a rate lower than the all-rail route, because of their 60 or 70 miles of ferry, which in the winter is more liable to obstruction or delay (though these, we believe, rarely occur) than in summer. The other roads are not willing to permit this, or so great a difference as the Michigan roads claim; and the result is that Milwaukee business has several times been demoralized for longer or shorter periods, and when rates are cut at Milwaukee they must be at Chicago also, or Chicago will suffer; and when rates are cut at Chicago, east-bound business is not likely to be worth anything anywhere until they are restored again.

It had not been proposed this year to pool the Milwaukee business; it was thought that with the traffic divided at the other places that had been named, all the Milwaukee business would be caught before passing the meridian of Toledo. But as the pools have not been completed yet, cuts at Milwaukee have their full effect on Northwestern traffic generally. Early this week the lines interested in the Milwaukee business seemed prepared to settle their differences and to maintain rates; and it was even thought probable that a pool of Milwaukee shipments would be made; but just as the trouble there seemed likely to be overcome, the cutting in connection with steamer shipments to Europe put everything into confusion, and now it does not appear that harmony at Milwaukee will mend matters much.

Earnings of the Third Quarter on the Lake Shore Road.

The report of the Lake Shore & Michigan Southern Railway Company to the State Engineer and Surveyor of New York for the year ending with September, makes it possible to ascertain and compare the earnings and expenses of that most important line for the third quarter of the year—the months of July, August and September—which are especially interesting as giving some clue to the through business this year, at least on the parallel roads.

For the past six years, then, the earnings, expenses

and net earnings of this road for the third quarter of the year have been:

	Gross earnings.	Expenses and taxes.	Net earnings.
1873.....	\$4,825,247	\$3,456,014	1,369,233
1874.....	4,203,252	2,814,744	1,388,508
1875.....	3,564,960	2,403,280	1,071,671
1876.....	3,569,591	2,448,709	1,120,882
1877.....	3,303,133	2,052,103	1,251,030
1878.....	3,552,996	2,314,827	1,238,169

The net earnings of the quarter thus appear to be very nearly as large as last year, and, excepting that, the largest since 1874. This was hardly to be expected. It is true that last year's traffic was unusually stagnant in July, and that east-bound freight was pretty heavy nearly all the quarter this year, and part of the time very heavy; but, on the other hand, east-bound rates are supposed to have been tolerably maintained last year, and for more than half of the quarter this year they were less than the cost of carriage, and part of the time lower than ever before known. Expenses, it will be noted, were considerably greater than last year, though smaller than in any previous year. This, probably, is at this time quite a common experience where the circumstances are normal and traffic has increased. Little has been gained by a fall of prices for a year past, and where more work is done it is likely to cost more to do it.

The last quarter of the year on this road usually is the most productive of all. Last year the gross earnings for that quarter were \$3,740,860, and the net earnings, \$1,616,123. But that was an exceptionally favorable quarter, through rates being higher than this year and traffic large. There was some cutting of rates in December, but not enough to make them very low (that effect came in January and after), probably not any lower than the regular rate is now; and the Lake Shore road is reported to have gained considerable traffic by the operation before the month closed. Matters do not start any more fairly this December, though the prospect is that the roads will not permit the Winter's east-bound business to be spoiled as it was last year. But with their best efforts it is not likely that they will be able to make the through business any more profitable in December than it was last year. Through business, however, is not all that affects earnings and profits. If it is discussed more than anything else it is because we have some definite knowledge of it, or of some important parts of it, quantities carried and rates being both published, and this is the traffic which is liable to the greatest fluctuations. But in some respects this season (since harvest) has been unusually unfavorable for the local business of roads like the Lake Shore. The excellent crops of Michigan and Ohio ought to have had something like the effect on the Michigan Central, Lake Shore, the Fort Wayne and the Pan-Handle roads that has been shown since harvest on a few lines further west, of which the Chicago, Burlington & Quincy is a brilliant instance. The Michigan and Ohio roads do not depend to so great an extent on the agricultural products of the country on their lines; but a moderate increase in this local traffic must benefit them much more than a large increase in through traffic, the margin of profit being much greater. The immense increase of grain receipts at Detroit, Toledo, etc., indicates that the local traffic in this district must have been exceptionally large in certain staples; and it is not yet so devoted to manufactures that the prosperity of the farmers is not felt pretty strongly in greater activity in trade generally.

The German-Austrian Postal Traffic.

The postal traffic of the German-Austrian postal union, some comments on which are given elsewhere in these columns, applies to Germany, Austria and Hungary alike, but the rates are not invariable without regard to distance. It is what is called a "zone tariff." There are six zones for each post office, and a rate for each zone. Post offices within 10 German miles (47 English miles) are in the first zone, more than 47 and up to 94 (English) miles distant in the second, more than 94 and up to 235 in the third, more than 235 and up to 470 in the fourth, more than 470 and up to 705 in the fifth, and all more than 705 miles distant in the sixth. Packages are carried at the rate of 6 pfennige or 3 kreutzers (a trifle less than 1½ cents) per kilogram (2.2 lbs.) in the first zone, or at the rate of about two-thirds of a cent per pound, though the rate is the same for all weights less than a kilogram. To the second zone the rate is twice as high, to the third four times, to the fourth six times, to the fifth eight times and to the sixth ten times as high, and three cents a package more if not prepaid. But any package of 11 pounds or under must pay 7½ cents to places in the first zone, and 15 cents to all offices in the other zones. Putting this in tabular form for the different weights of packages and distances we have:

Miles.	2.2 lbs.	4.4 lbs.	6.6 lbs.	8.8 lbs.	11.0 lbs.	22 lbs.	33 lbs.
Up to 47..	7½	7½	7½	7½	7½	15	22½
47 to 94..	15	15	15	15	15	30	45
94 to 235..	15	15	15	15	15	45	75
235 to 470..	15	15	15	15	15	60	105
470 to 705..	15	15	15	15	15	75	135
Over 705..	15	15	15	15	15	90	165

Thus you can send an 11-lb. package between Hamburg and the Danube for 15 cents, and two 11-lb. packages for 30 cents, but if you put them together into one 22-lb. package, it will cost you three times as much, and four 11-lb. packages, which will cost 60 cents between the most distant offices of the two empires, will cost \$2.40 if tied up together. But for packages of 11 lbs. and under the rates are astonishingly low for an express service, and for the long distances are low for a freight service. They could not possibly be afforded if the post office paid anything for transportation. This it does not do, and its only expenses are for handling, etc., and are substantially the same whatever the distance may be which the packages travel. And this is probably the explanation of some of the features of the tariff, which would make the rate on an 11-lb. package the same from New York to New Haven as to Chicago or St. Louis, while the great increase for heavy packages is intended to discourage the intrusting of such freight to the mails—with perhaps a slight recognition of the fact that if the railroads carry for nothing for the Post-Office Department it will be desirable to leave them a little business on which they can earn something.

The convenience of this service is very great, as it almost annihilates the obstacle of distance for all merchandise of moderate weight, and enables the whole country—in this case the people of two great empires—to make their purchases of many kinds of supplies anywhere between the Adriatic and the Baltic, the Rhine and the Niemen, where prices are most favorable. It is as if a dweller in the backwoods or anywhere else in the country should be able to have his teas brought from San Francisco, his coffee from Baltimore, sugar from New Orleans, flour from Minneapolis, dry goods from New York, and anything else mailable from anywhere else in the United States or Canada, in 11 lbs. packages at the rate of 1½ cents per pound. It would, in this country, doubtless, tend to the centralization of trade in a few great cities. It would be a convenience, however, which would be paid for chiefly by others than those benefiting by it. In Germany, where the railroads are not paid for carrying the mails, the railroad-owners foot the bill, unless they are able to make up the loss by higher charges on freight and passengers. Such a measure in this country, like the existing carriage of third-class mail matter, would be accompanied by an increase in the weight of the mails and a corresponding increase of the payments to the railroads for carrying them, and a larger deficit in the Post-Office Department, which would be met by a corresponding increase in taxation. The *Austrian Railroad Journal* speaking of this new postal tariff, says that it contains incredible anomalies, among which is this, that a shipment of 600 grams (about 21 ounces) to certain distances costs more than one of 6 kilograms (13.2 lbs.).

Money and valuables are also carried under this international postal contract, but the rates are the same for them whatever the distances, varying only with the value. The charge is at the rate of 1½ cents for \$75, to which, we believe, is added the package tariff for the corresponding weight and distance. That is, the tariff is in the nature of an insurance, the valuables being sent like any other package, with a declaration of value for which charge is made. Thus \$2,000 in gold (weighing less than 11 lbs.) would be carried from New York to Chicago for 15 cents plus 1½ cents for every \$75, or 40 cents—for 55 cents in all. From San Francisco to New York the rate would be no greater by the terms of the German-Austrian tariff; but they have no such distances, so that they did not need to take them into consideration.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

New York Elevated.—The *East Side Line* is extended through Third avenue in New York from Sixty-seventh street to Eighty-ninth street, 1 mile.

Baltimore & Hanover.—Extended southward to Cramer's, Md., 3½ miles.

Elberton Air Line.—Extended from Bowman's east by south to Elberton, Ga., 5 miles, completing the road. It is of 3-ft. gauge.

Detroit & Bay City.—The *East Saginaw Branch* is extended west by north to East Saginaw, Mich., 7 miles, completing it.

Southern Minnesota.—Extended from Fairmont, Minn., westward to Jackson, 25 miles.

Chicago, Rock Island & Pacific.—The *Atlantic & Audubon Branch* is completed from Atlantic, Ia., northward to Audubon, 26 miles. The *Harlan Branch* is completed from Avoca, Ia., north to Harlan, 14 miles.

This is a total of 81½ miles of new railroad, making 2,207 miles completed in the United States in 1878, against 1,977 miles reported for the corresponding period in 1877, 2,177 in 1876, 1,237 in 1875, 1,767 in 1874, 3,507 in 1873 and 6,885 in 1872.

DISCRIMINATING RATES have been greatly complained of by the German government, which urged that the value of the products of its forests were unduly depressed by the low rates of the railroads on timber from Austria and Hungary. In this case the freight from Austria was much more in the aggregate than on the German wood, but less per ton per mile. On this question there was a change in the ministry in Prussia, and certain railroads were compelled to increase their tariffs. Now the German Post-Office Department carries all kinds of goods in packages of 11 lbs. or less at very low rates, making an extremely convenient service. Recently it has succeeded in negotiating a treaty with Austria by which this postal package business is extended to that country at the same rate as within Germany. So we have the spectacle of the German government through its Minis-

try of Trade forbidding the carriage of goods from Austria at less rates per ton per mile than on German shipments, while through its Post-Office Department it contracts to carry at very much less rates per ton per mile, and enables the Vienna merchant to retail his Austrian goods throughout Germany with no more cost for transportation than the Berlin merchant has to pay after having paid for the carriage from Austria to Berlin. The Post-Office Department does not mind it, because the railroads have to carry the mails without pay; but the railroads, as a matter of course, are disgusted by a policy which takes from them freight which pays and puts it into mail trains to be carried at greater expense and make no return whatever. When the United States takes 11 lbs. packages from New York to Missouri and California for a trifle, we may expect an outcry from St. Louis and San Francisco merchants; but if in addition it should carry such packages at the same price from Paris and London, it would not be endured a year. Yet this is very much what the German Post-Office Department is doing. The rates to and from all places in Austria and Hungary are but about 15 cents for a 11 lbs. package, and such a package will hold a suit of clothes, several silk or muslin dresses, or a pretty heavy pair of blankets. Indeed, postage from the most widely separated points of the two empires becomes nearly or quite the cheapest freight rate. The rate just made 15 cents has been hitherto 65½ cents. The convenience of this service is sure to make it popular, as it substantially makes every post-office an express office where packages (not more than 11 lbs.) of what are considered mailable goods may be shipped to and received from the whole empire and the other countries which have entered into the arrangement. At present, besides Austria, Switzerland, Belgium and Denmark interchange with Germany a postal package business; but to and from these countries the rate is 20 cents instead of 12. When the tariffs do not interfere and the rates equal the cost of carriage, little is to be said against such an arrangement and much in its favor; but the German practice of taking much less than cost for the work and making the railroad companies do it for nothing seems an outrageous exercise of authority. It is true that the railroads in accepting their charters agreed to carry the mails without charges; but in those days mails meant letters and papers, and not express goods. Apparently, if the government should think best to take all freight at the post-offices, the railroads would have to carry it all for nothing, and live—or try to—on their passenger traffic, which just now seems to be a source of expense rather than profit.

THE EARNINGS OF THE NEW YORK STATE CANALS during the past season, which lasted 237 days, were (very nearly) \$994,365, against \$880,896 for a season of 214 days last year. The average per day thus was \$4,196 this year and \$4,116 last year, the increase being about 2 per cent. and the business having been probably the largest in the history of the canals. The expenditures on the canals in any year are limited by the constitution of the state of New York to the gross amount of the tolls for the preceding fiscal year, which ends Sept. 30. The receipts for the year ending Sept. 30, 1878, were \$972,047, which is, we believe, considerably less than the expenditures for maintenance and repairs usually have been. The canals, however, are now managed more economically than they used to be, and we have as yet seen no complaints that the last year's tolls will not suffice to keep them up. All but a small fraction of the earnings are made on the Erie Canal, and most of the remainder on the Champlain Canal.

LAKE NAVIGATION is substantially at an end for vessels passing through straits, but as late as the 6th inst. the propeller Colorado cleared from Chicago for Buffalo with a cargo of grain, flour, oil cake and grass seeds, receiving at the rate of 7½ cents per bushel for wheat, or 12½ cents per 100 lbs. for the whole cargo. The same day seven vessels cleared from Chicago for Lake Michigan lumber ports. The arrivals at Chicago in November were 270 steam vessels and 884 schooners, with an aggregate capacity of 398,751 tons, and the clearances were 266 steam vessels and 790 schooners, with 378,008 tons capacity. Water has been let out of the Lachine (St. Lawrence) Canal, and work on its enlargement is to be begun at once. On the 5th inst. a propeller and schooner cleared from Buffalo to Chicago, and the same day two steam barges loaded with wheat were chartered at Milwaukee for Buffalo.

NOVEMBER EARNINGS are reported by twenty railroads, all but four of which show an increase in comparison with their earnings in November of last year. The Northwestern roads that have suffered so much since harvest by the poor wheat crop on their lines continue to show decreases—all but the Chicago & Northwestern, but not so large as they have been heretofore. The largest decrease is on the Central Pacific; the largest increase, aside from the new lines with a greater mileage are the International & Great Northern (26½ per cent.) and the St. Louis & Southeastern (18 per cent.)

THE DECEMBER MASTER CAR-BUILDERS' MEETING will be held on the evening of Thursday of next week (Dec. 19), at which the revised rules for repairs of foreign cars will be discussed. All railroad men, and others interested, are most cordially invited to attend.

NEW PUBLICATIONS.

The Bridges of North America; being a comparison of the American and European systems. By L. A. Camolli, C. E. In quarto, with 213 cuts, and atlas in folio of 54 plates. Librairie Lefevre, Paris.

"This work is the most interesting and complete that has

yet been published on American iron bridges. Its aim is to combat the unjust prejudices against American bridges which prevail in Europe. The book is divided into two parts.

"The first is exclusively theoretical. The calculations are based upon the parallelogram of forces, which gives accurate results; while European methods, much more complex, give formulae false in practice. These calculations show how simply and correctly the American engineer is able to determine his strains.

"When the reader has digested the theoretical part of this book, he will find in the second part descriptions of the elegant and gigantic bridges farther described in the album. They will appear to him not manifestations of a rash audacity, but precious examples for serious study."

So much we have translated from the French publisher's notice, from which it will be seen that at last American engineers have found a bold and able defender in their French confrère.

The album of plates is alone worth the cost of the book (45 francs). It illustrates all the latest and best examples of iron bridges and a few of wood. It even gives what the Poughkeepsie bridge may be if the financial question is ever solved. A translation of the work would be a valuable addition to the literature of bridges which we hope some American publisher may undertake.

EDITORIAL LETTERS.

VII.

ST. LOUIS.

The proper basis for the payment for the service of cars owned by one company and which are run on other lines is one of the questions in railroad management which is still disputed. Whether the amount paid shall be so much for each day that a car is on the foreign road, or whether it shall be a certain sum for each mile that it runs on such a line, is the point about which managers and accountants still differ. One of the latter, who is an advocate of the per diem system, presented the case somewhat in this wise: If we charge mileage for the service of our cars on foreign roads, we are almost absolutely at the mercy of those lines, because the only record of the service performed by the cars is what the foreign lines choose to report. They can take our cars and use them for their own local traffic and report none of the latter mileage, or they can run them on a side track and allow them to stand there for a day, a week or a month, depriving us of the use of them and paying us nothing for their absence. If, however, the charge made is for the time the car is absent, the foreign line will carry it to its destination, and return it as soon as possible, or if it does keep it we will receive payment for its absence. Besides, the expense of keeping the individual mileage of cars is very great, requiring, on a large road, a larger clerical force, and it also becomes very complicated.

On the other hand another accountant who advocates the "mileage system" says that as a question of abstract justice, payment based upon the service of cars per diem is undoubtedly the fairest way, but as a matter of fact, we have been unable to collect charges based upon that system. The difficulty, he says, is that there are always many causes for the detention of cars for which the foreign roads are not, or say they are not, responsible, and for which consequently they refuse to pay. A car goes on a foreign road and needs some repairs for which those who receive it will of course disclaim the responsibility, and refuse to pay for the detention. At competing points it is necessary to keep cars to be loaded at the convenience of shippers. The line with which the cars are exchanged will not pay for the service of those which are held to secure freight over the line by which they are owned. An example of this kind came under the notice of the writer during his travels. At a large manufacturing establishment some surprise was expressed at the limited facilities available for the storage of lumber. "Oh," says the proprietor, "we allow it to stand in the cars until we use it." This was at a competing point. Doubtless, if the owners of the cars had made complaint, rival lines would soon have acceded to the needs of the manufacturers. It can be seen though that the company which carried the lumber to its final destination would refuse to pay for the service of the cars while standing on the side-track, which they were obliged to do, in order to secure the freight over the line which first received it.

With reference to the expense of keeping mileage, Mr. Sweeney, the Car Accountant of the Iron Mountain road, says that on their line it is the cost of his own salary and that of two clerks and an office boy, with the necessary stationery and office expenses, amounting in all probably to less than \$5,000 per year. The total car mileage on their line is about 36,000,000 per year, from which some idea may be found of the relative expense on other and larger lines. On the latter, he says, some additional expense must be incurred at important terminal points. At present the clerical work at such places on the road referred to is done by the yard-masters.

Whether the charge for car service should be made at a certain rate per day or per mile, it is perhaps not possible to decide at present, but there can be no doubt that the expense and difficulty of keeping individual car-mileage has in many cases been very much exaggerated. When the accounts are properly systematized they become quite simple, and the work can then be done by any ordinary clerical assistance, which is not expensive. The difference in cost between keeping accounts of charges for car-service on the per diem system and that needed for charging for mileage is comparatively little, and even if the former system is adopted, it would

still be profitable to keep account of the mileage of cars. The saving which can be effected in wheel service alone, it is believed, would pay several times over the additional cost of keeping the accounts of individual car mileage. No manager of a road has any other correct basis of comparison of the cost of engine service, of the amount of service performed by the cars, the cost of car repairs, of oiling brasses, the endurance of rails and a number of other statistics which require constant and intelligent watchfulness or else they will grow unreasonably large or refuse to be diminished. With an account of car mileage, a railroad manager will always have a correct standard for measuring expenses, but without the knowledge which such accounts will give him, he must always be more or less in doubt whether things are costing too much or too little.

At the shops of Missouri Pacific Railroad, over which Mr. Hewitt presides, there is much activity in keeping up repairs. There are a number of new devices in use in this shop, the description of which will be reserved until engravings can be published.

Messrs. H. & H. Elliott, in East St. Louis, have recently extended their shops for the manufacture of frogs and switches, and are now busy on orders for western roads.

At the Washington University, in St. Louis, through the instrumentality of Prof. Smith and some of his colleagues, a course of workshop practice has been introduced. At present this department occupies quarters in an old building adjoining the University, and is equipped with work benches, forges, lathes, etc., but thus far the "plant" is somewhat meagre, and awaits the liberality of some one disposed to give assistance. At present the students are taught the use of ordinary carpenters' and blacksmiths' tools, accomplishments which will do any one good service in after life. To what extent this kind of practical instruction may be carried in schools of this kind is a matter about which there might be a great deal of discussion. That there has been a disposition on the part of rich Americans to bequeath their money for the purpose of giving instruction in "practical" affairs has been shown in many recent instances. Whether this is possible, in the sense in which some of these testators have supposed it to be, is open to question.

MATTOON.

The shops of the Indianapolis & St. Louis road, of which Mr. A. J. Sanborn is Master Mechanic, are at Mattoon, Ill. where that line intersects the Illinois Central road. The machinery shop is 200 x 110 ft., the round-house has 22 stalls for engines and occupies a half circle. The blacksmith shop is 100 x 60 ft., the wood-working shop 200 x 40 ft. They are all built of brick excepting the paint shop. The shops are well equipped with tools and machinery, and give excellent facilities for doing the work on this line. Mr. Sanborn has built two engines during the past year—one for freight and the other for passenger traffic.

The road operated extends from Indianapolis to St. Louis, or 263 miles. There is apt to be some confusion in the minds of persons not very well acquainted with the railroads in this region, regarding this line and the St. Louis, Vandalia, Terre Haute & Indianapolis road, commonly called the Vandalia Line. The former is the more northerly of the two, and is run in connection with and in the interest of the Cleveland, Columbus, Cincinnati & Indianapolis and its connecting roads; whereas the Vandalia Line is run as a connection of the Pennsylvania road. The general offices and shops of the Vandalia Line are at

TERRE HAUTE.

The shops are among the oldest in the western country, and have been for a long time under the charge of Mr. C. R. Peddle. He has just completed a new office and store-house, an improvement which was much needed, as the old office was dark and inconvenient. The shops and machinery here are kept in admirable order. Among the machinery is one of Mr. Mason's double-truck locomotives. It has six driving wheels, and a six-wheeled truck for carrying the tank. It was secured by the Vandalia Company from a bankrupt road in Indiana, to which it was sold by Mr. Mason, and which failed to pay for it. The engine is very heavy and will pull an enormous load, but the driving-wheels are quite small, and it is therefore difficult to make the speed at which freight trains must run on nearly all Western roads. There has not been any serious trouble with the flexible steam pipes, and the engine has been in regular service ever since it was received, and Mr. Peddle says it will run into any curves or switches on the road, and it rides as easily as a passenger car. It would be very interesting to have some comparative tests made with this engine and some of the ten wheeled or Mogul pattern. That the roads doing a heavy traffic in the West will be compelled to adopt a heavier class of engine, especially on lines where there are heavy grades, seems to be absolutely certain, and with the unballasted roads of that region, it will be necessary to distribute the adhesive weight required on more than four driving-wheels. Whether the engines will be of the Mogul, ten-wheeled or some other pattern is a question which every master mechanic will at some time be called on to answer.

The works of the Terre Haute Car and Manufacturing Company are near the shops of the railroad. The former company is engaged at present on an order for 500 cars for the New York, Lake Erie & Western Railroad. This is part of the recent large order given out by the latter company. The cars are all built under a rigid inspection. An inspector is present all the time at the works, and is provided with gauges to see that the screws are made truly to the standard. This is the first time, we believe, that a railroad company has compelled the manufac-

turers of cars to conform precisely to the standard for screw-threads, and to Mr. Chanute belongs the credit of having introduced this thorough reform. There was, of course, much opposition to it at first, but an inspector with gauges soon compelled conformity to the terms of the contract. The managers of the Terre Haute Company say that hereafter they will not use any other threads excepting the standard. As the contract for the New York, Lake Erie & Western road is distributed among some half-dozen different establishments, it will be seen that this reformation is wide spread.

The shops of the Terre Haute Company are more remarkable for their adaptation to the purposes for which they are used, than for the skill with which they were designed. They consist of a number of rambling old buildings which have been enlarged and extended in various ways to meet the wants of the business of the company. Of course the work done is not dependent upon the character of the buildings, and every needed facility seems to be supplied, and at present a very large number of men are employed.

At Terre Haute another effort has been made to establish a school to give a "practical" education to students. Mr. Chauncey Rose, who was formerly President of the old Terre Haute & Indianapolis road, and who died a few years ago, left what then amounted to \$450,000 to found the "Rose Polytechnic Institute." This bequest was invested in various kinds of railroad securities, but specific instructions were given about the kind of buildings which were to be erected. These instructions the trustees have followed out, and the buildings are now completed at a cost of about \$125,000. Meanwhile the railroad securities which were bequeathed have shrunk in value, and now with the buildings completed the trustees are without sufficient funds to supply the requisite equipment of books, apparatus, etc., to open the school.

The main school building is a beautiful gothic structure, built of brick, and admirably arranged for the purpose for which it was intended. Mr. Rose's intention was to give instruction in workshop practice, and therefore buildings have been put up for that purpose. These consist of a machine shop 100 x 45 ft., a blacksmith shop 35 x 45 ft., a brass foundry 15 x 45 ft. with a store-house for iron adjoining. The machine shop is two stories, the upper part to be used for light machinery and for a pattern and wood-working shop. It is very much to be regretted that so much money was expended on the buildings, and that these are now unoccupied. The intention of the trustees is, we believe, to wait until the income from the remainder of the bequest shall amount to enough to equip the school with the needed appliances, and the shops with tools. The income from the remainder of the bequest now amounts to about \$15,000 per year. As Mr. Charles R. Peddle is one of the trustees, the school is quite certain to have the advice of an experienced practical man, with a sufficient amount of theoretical knowledge to know its value. Still, the chances of getting a good practical education would, it is believed, be better in the shops of the Vandalia road, with Mr. Peddle for professor, than they will be in the Rose Institute, with any one whom the trustees can employ as a teacher.

LOUISVILLE.

From Terre Haute this letter must record a journey from that place to Louisville direct. At the latter place are the shops of the Louisville & Nashville Railroad. This road is doing a good business, and there is consequently plenty of work to do in the shops. A Consolidation engine is nearly completed, and it is expected, will soon be put at work. Its weight will be from 80,000 to 90,000 lbs., with 50-in. wheels and 15 ft. 4 in. driving-wheel-base and 22 ft. 9 in. total wheel base. The cylinders are 20 x 24 in. The grate is 7 ft. 3½ in. long and 4 ft. ¾ in. wide. (The gauge of the road is 5 ft.) The diameter of the smallest ring of the boiler is 54 in., of the largest ring 56½ in. The boiler is straight on top and has 172 two-inch tubes 13 ft. 4 in. long. The shell of the boiler is made of steel ⅞ in. thick. The vertical seams are all double-riveted, and the horizontal seams treble-riveted. The water space in front of fire-box is 4 in., on sides 3½, and at the back 3 in. wide. There are two domes, one over the fire-box and one near the smoke-box. The distance from top of rail to centre of boiler is 6 ft. 2 in.

Some passenger engines are also in progress, with 18 x 24-in. cylinders and 5½-ft. wheels and boilers 49½ in. diameter on smallest ring, with a fire-box 5 ft. 4½ in. long.

Mr. De Funiak is using an axle with 4 x 8-in. journal, not only under the four-wheeled coal cars, which were illustrated in the *Railroad Gazette* of May 10 of this year, but he is now putting it under sleeping cars with six-wheeled trucks, and is using the same size of journal under tenders.

Four new passenger cars are also in progress in the car shops, two of them to have four and two six-wheeled trucks.

The accounts of the machinery department of this road are being kept in an admirable way, and we shall refer to the system in use at some future time.

On the Louisville, Cincinnati & Lexington road Mr. Schaeffer has recently been appointed Master Mechanic. The shops are located at the eastern end of Louisville, and are very substantial structures. Mr. Schaeffer was absent at the time of our visit, which being in the evening after working hours, there was no opportunity of going through the shops.

Mr. Wells, who, as most of our readers know, presides over the shops at Jeffersonville, across the river from Louisville, is not doing much excepting repairs. He has just completed an engine, which he rebuilt on what has come to be called the "Forney" plan. It is of very neat design, and promises to be a very efficient machine. Mr. Wells is at

present looking out for information for the report on boiler construction for the Master Mechanics' Convention of next year.

At the Ohio Falls Car Works about 700 men are now employed and about \$3,000 worth of work is turned out per day. Like all the Western car shops these works are full of orders.

CINCINNATI.

Our stay here was brief. Mr. Setchel, his many friends will be glad to know, is well, and he is looking forward to the next convention of the Master Mechanics' Association as likely to be one of the most successful which has yet been held. Western master mechanics will probably attend very generally.

Messrs. J. A. Fay & Co., manufacturers of wood-working machinery, are full of orders. Their exhibit at Paris has brought them many foreign orders, and they are now shipping machinery to all parts of the world.

Messrs. Post & Co. are also doing a heavy business, but complain of low prices. The amount of business they say is up to that of previous years, but as the prices are so low its bulk is greater than heretofore.

From Cincinnati, the journey of which this series of letters has been the record was made direct to New York, and as there is nothing special to record of that journey, the letters will end here.

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings will be held as follows:

Colorado Central, annual meeting, at the office in Golden, Col., Dec. 28, at 11 a. m.

Richmond, Fredericksburg & Potomac, adjourned annual meeting, at the office in Richmond, Va., Jan. 21.

Dividends.

Dividends have been declared as follows:

Morris & Essex (leased to Delaware, Lackawanna & Western), 3½ per cent., semi-annual, payable Jan. 2.

New York & Harlem (leased to New York Central & Hudson River), 4 per cent., semi-annual, payable Jan. 2. Transfer books close Dec. 14.

New York Central & Hudson River, 2 per cent., quarterly, payable Jan. 15. Transfer books close Dec. 14.

Central of Georgia, 2½ per cent., semi-annual, payable Dec. 19.

Chicago & Northwestern, 3½ per cent. on the preferred stock from the earnings of the current year, and 2 per cent. on the common stock from the surplus of the last fiscal year, both payable Dec. 28. Transfer books close Dec. 14.

Syracuse, Binghamton & New York, 3 per cent., semi-annual, payable Dec. 20.

Atlantic & Pacific Telegraph, 0¼ per cent., quarterly, payable Dec. 30.

Western Union Telegraph, 1½ per cent., quarterly, payable Jan. 15.

Lehigh Valley, 1 per cent., quarterly, payable Jan. 15.

Foreclosure Sales.

The *Ohio & Toledo* road is reported to have been sold recently at Sheriff's sale, and bought by Mr. Ingersoll, of Cleveland, for \$28,000. It is of 3-ft. gauge, and extends from Minerva, O., to Dell Rey, 22 miles. It was originally the Carrollton & Oneida; the present company bought it several years ago, changed the gauge and extended it.

The sale of the *New York, West Shore & Chicago* road has been postponed from Dec. 9 to Feb. 7, 1879, by order of the United States Circuit Court.

Railroad Claim Agents' Association.

On the second day (Dec. 5) of this Association's meeting at St. Louis, the committee appointed the previous day to formulate a set of rules for the settlement of claims reported the following, which were adopted:

1. That a bill made out by the claimant be attached to the claim when presented for investigation.
2. That the original or duplicate bill of lading and original expense bill accompany a claim for overcharges.
3. That the original bill of lading, expense bill, and invoice, or certified copy by railroad agent, shall accompany a claim for damage, and also for loss; when a portion of a shipment is lost, the original bill of lading and invoice, or certified copy of the same, shall accompany a claim.
4. When the open rate from a point is less than the printed tariff, and an overcharge is the result, original expense bills are not necessary in the settlement of such overcharges.
5. That all claims shall be recorded in the name of the consignee.
6. If freight is found to be short or damaged in a car arriving at a destination with forwarding seals intact, the claim, if any, should be pro-rated on the earnings basis.
7. That all railroads keep a record of locks and seals, with their marks, and other fastenings on a car, on receiving the same from and delivering it to connecting connecting roads.
8. When evidence collected in reference to a claim is in itself positive proof of an attempt at fraud and to obtain money or its equivalent under false pretenses, it is desirable that the railroad company upon which such attempt is made prosecute such person or persons to the utmost limit of the law.
9. That the receipt or voucher signed by the claimant shall be attached to a claim when forwarded to a connecting line for collection.
10. That railroad companies shall use all dispatch possible in the handling of any and all claims.
11. That acknowledgment of the receipt of claims should be clearly made in all cases.
12. That all roads be requested to stamp the original expense bills connected with the claim as soon as a voucher is made.

After finishing the routine business the Association adjourned to meet in Philadelphia on the second Wednesday of September, 1879.

Meeting of Trunk Line Presidents.

At the meeting of the trunk line presidents held at the Windsor Hotel, in New York city, Dec. 5, 1878, there were present:

For the New York, Lake Erie & Western Railroad Company, H. J. Jewett, President, and Robt. Harris, General Manager.

For the New York Central & Hudson River Railroad Company, Wm. H. Vanderbilt, President, Wm. K. Vanderbilt, Second Vice-President, and J. H. Rutter, Traffic Manager.

For the Baltimore & Ohio Railroad Company, John W. Garrett, President, and M. H. Smith.

For the Pennsylvania Railroad Company, Geo. B. Roberts, First Vice-President, and A. J. Cassatt, Third Vice-President.

Albert Fink, Trunk Line Commissioner.
H. J. Jewett was Chairman, and John P. Green, assistant to the President of the Pennsylvania Railroad, was Secretary.

Mr. Jewett offered the following:
Resolved, That the existing contract between the four trunk lines in regard to the west-bound traffic, dated July 8, 1877, be so modified as to extend its operations during five years from Jan. 1, 1879, instead of terminating the same as now provided, upon three months' notice.

Resolved, That in order to establish a method for determining the percentages in which the west-bound traffic shall be divided, between the four trunk roads, the Commissioner heretofore appointed and now the Commissioner of the parties here represented, upon receiving official notice through the Chairman of the Trunk Line Executives, of an application for a revision of the existing appointment, shall carefully examine into the justness of the demand, and after a full investigation of the reasons which may be assigned for it, shall make a report in writing to the Presidents of the trunk lines, embodying the result of this investigation and the conclusions that he may have formed and the reasons therefor.

Should the Presidents, after the consideration of this report, not be able to agree upon the division, the Commissioner shall decide the question, giving due consideration to any objection that may have been urged against this report, and such decision shall be final and binding on the parties to this contract.

The following was also adopted:
Resolved, That the representatives of the trunk lines in the Executive Committee cause instructions to be issued to all agents of lines or roads soliciting business over the trunk lines, to maintain hereafter strictly the established tariff rates on west-bound business from Boston, New England, New York, Philadelphia and Baltimore to the termini of the trunk lines and to points beyond. Notice also to be given to the Western connections of the trunk lines that if they fail to maintain rates, the freight will be diverted from their roads, and that the percentages of division agreed upon, or which may hereafter be agreed upon between the Western roads, will be carried out by the trunk lines.

It was also decided to send the following communication to Western roads connecting with the trunk lines:

The presidents of the trunk lines at their meeting Dec. 5, learned with great regret the tendency to a demoralization of east-bound rates, and, by a unanimous resolution, decided to call upon all their direct or remote connections to maintain the full established east-bound rates which took effect Nov. 25, and further resolved to enforce the maintenance of the same to the fullest extent.

ELECTIONS AND APPOINTMENTS.

Arkansas Midland.—This company has been organized as successor to the Arkansas Central by the election of the following directors: S. J. Clark, J. J. Horner, G. D. Jaquess, George K. Jenkins, A. H. Johnson, J. B. Johnson, W. E. Moore, John C. Palmer, N. Straub. The board elected A. H. Johnson President; George K. Jenkins, Vice-President. Mr. Johnson has been Receiver and General Manager some time.

Baltimore & Ohio.—At the monthly meeting of the board in Baltimore, Dec. 11, Mr. John W. Garrett was unanimously re-elected President.

Blue Line.—Mr. W. J. Boyle has been appointed Agent of this line at Milwaukee, Wis., vice T. Fairbairn, resigned, taking effect Dec. 1. His address will be No. 11 Newhall Block.

Boston & Lowell.—Manager Hosford having ceased to operate this road jointly with the Nashua & Lowell, the company now works its own and leased lines directly with the following organization: Superintendent, Wm. M. Parker; General Freight Agent, J. S. Lincoln; General Ticket Agent, B. F. Kendrick; Cashier and Treasurer, Charles E. A. Bartlett. These are the old officers.

Central Pacific.—Col. E. C. Fellows has been appointed Assistant General Superintendent, to fill the vacancy caused by the death of the late John Corning. Col. Fellows has been for nine years past Superintendent of the Western and Visalia divisions.

Cincinnati, Wabash & Michigan.—The office of Mr. Owen Rice, General Freight and Ticket Agent of this road, will be at Wabash, Ind., on and after Dec. 15.

Denver & Rio Grande.—At the annual meeting in Colorado Springs, Col., Nov. 29, the old board was re-elected, as follows: W. A. Bell, A. C. Hunt, W. J. Palmer, H. A. Risley, W. Wagner.

East Tennessee, Virginia & Georgia.—At the annual meeting in Knoxville, Nov. 27, the following directors were chosen: R. C. Jackson, Joseph Jaques, C. M. McGhee, Knoxville, Tenn.; Joseph R. Anderson, Bristol, Tenn.; Wm. C. Kyle, Whitesboro, Tenn.; S. D. Reynolds, Loudon, Tenn.; W. R. Sevier, Jonesboro, Tenn.; John Talbott, Talbott's Station, Tenn.; R. H. Richards, Atlanta, Ga.; Thomas G. Barrett, Augusta, Ga.; B. F. Newcomer, W. T. Walters, Baltimore; Adrian Iselin, M. K. Jesup, R. T. Wilson, New York. The only new director is Mr. Newcomer, who succeeds Joseph H. Earnest, deceased. The board re-elected R. T. Wilson President; C. M. McGhee, Vice-President; James G. Mitchell, Secretary and Treasurer.

Galena & Southern Wisconsin.—At the annual meeting in Galena, Ill., Dec. 3, the following directors were chosen: John A. Burrichter, Wm. Dickson, O. S. Horton, Henry D. Howard, F. Stohle.

Havana, Rantoul & Eastern.—Mr. H. E. Bullock has been appointed Acting Superintendent, in place of A. W. Wright, resigned. Mr. Bullock is also Treasurer.

Knoxville & Ohio.—At the annual meeting in Knoxville, Tenn., Nov. 26, the following directors were re-elected: C. M. McGhee, R. C. Jackson, E. J. Sanford, Knoxville; Stanley Matthews, Cincinnati; W. T. Walters, Baltimore; Adrian Iselin, R. T. Wilson, New York. The board re-elected C. M. McGhee, President, and John L. Moses, Secretary and Treasurer.

Louisville, New Albany & St. Louis.—The bondholders, who bought this road over two years ago, have organized a new company with the same name, the directors being as follows: Samuel Bayard, St. John Boyle, Jesse J. Brown, Philo C. Calhoun, Edward Cummings, Elijah Newland, C. N. Warren.

New Haven & Derby.—The new board has elected J. H. Bartholomew President; C. L. English, Vice-President; F. E. Harrison, Secretary; Charles Atwater, Treasurer.

New York, Bay Ridge & Jamaica.—At the annual meet-

ing held Dec. 10 the following directors were chosen: M. G. Johnson, Jamaica, N. Y.; Martin Corbin, G. S. C. Dow, F. W. Dunton, W. B. Kendall, Brooklyn, N. Y.; D. C. Corbin, S. S. Moulton, Isaac D. Barton, J. K. O'Sherwood, New York; J. B. Upham, Charles L. Flint, J. P. Putnam, Boston; C. F. Faulkner, Keene, N. H.

New York, Providence & Boston.—At the annual meeting in Providence, Dec. 11, the old board was re-elected as follows: Charles H. Salisbury, Providence, R. I.; Henry Howard, Coventry, R. I.; Nathan F. Dixon, Westerly, R. I.; A. S. Matthews, Stonington, Conn.; John A. Burnham, Boston; Samuel D. Babcock, D. S. Babcock, Wm. F. Cary, J. Boorman Johnston, George M. Miller, Henry Morgan, New York.

Northern Pacific.—Mr. Otis Sprague has been appointed General Freight and Ticket Agent of the Pacific Division, in place of W. Wayne Vogdes, resigned. Mr. Sprague has been local agent and conductor on the line for seven years past, and comes from a railroad family, being the eldest son of Gen. John W. Sprague, who has been General Manager of the Winona & St. Peter, and of the Northern Pacific, Pacific Division, and is now General Superintendent of the Oregon Steam Navigation Company.

North Park & Wyoming.—The first board of directors is as follows: David E. Delaney, Charles R. Fish, Joshua Monti, Wm. Spruance, Georgetown, Col.; John H. Weston, Fort Madison, Ia.

Providence & Springfield.—At the annual meeting in Providence, R. I., last week, the old board was re-elected as follows: Amos N. Beckwith, Moses B. I. Goddard, Edward Pearce, Wm. Tinkham, Providence; James O. Inman, Horace A. Kimball, John L. Ross, Albert L. Sayles, Pascoag, R. I.; Sidney Dillon, New York. The board re-elected Wm. Tinkham, President.

Rhode Island & Massachusetts.—The following officers have been re-elected: Harvey Chase, President; S. W. Razez, Vice President; A. B. Chace, Secretary and Treasurer. The road is leased to the New York & New England.

Sac City & Wall Lakes.—The officers of this new Iowa company are: E. R. Duffy, President; D. C. Early, Vice-President; James N. Miller, Secretary; Levi Davis, Treasurer.

St. Louis, Keokuk & Northwestern.—At the annual meeting in Keokuk, Ia., Dec. 4, the following directors were chosen: A. L. Griffin, Keokuk, Ia.; J. R. Roberts, Clarksburg, Mo.; George Edmunds, Carthage, Ill.; D. P. Handy, W. H. Harris, Amasa Stone, Cleveland, O.; A. B. Stone, New York.

Syracuse, Binghamton & New York.—At the annual meeting in Syracuse, N. Y., Dec. 4, the following directors were chosen: Samuel Sloan, Moses Taylor, Wm. E. Dodge, Percy R. Pyne, George Buckley, George Bliss, U. A. Mordock, John Brishin, T. B. Fitch, E. F. Holden, F. H. Gibbens, Fred F. Chambers, B. G. Clarke. The road is controlled by the Delaware, Lackawanna & Western.

Union, Bluffton & Northwestern.—The first board of directors of this Indiana company is as follows: Wm. H. Dean, Joel N. Converse, Robert S. Fisher, Robert S. Dwiggin, William K. Smith, Charles S. Hardy.

PERSONAL.

—Mr. Lorenzo A. Sykes, one of the few survivors of the older generation of engineers, died at his residence in Orange, N. J., Dec. 9, aged 73 years. He was born in Otsego County, N. Y., and his first engineering work was as an assistant in the construction of the Morris Canal about 1827. In 1832 he left the canal and was appointed Assistant Engineer on the construction of the New Jersey Railroad from Jersey City to New Brunswick, under the late Capt. Ephraim Beach. Upon Capt. Beach's retirement Mr. Sykes was made Chief Engineer and Superintendent of the road, which position he retained until 1843, when he resigned and, in partnership with George S. Mills, leased the Morris Canal. This venture was not a very successful one, we believe, and after two years he gave it up. After engaging in several other public works he was appointed Superintendent of the Delaware & Hudson Canal and retained that position until 1866, when he resigned and retired from active life. Since then Mr. Sykes has resided quietly in Orange, where he was highly esteemed for his social qualities and kindness of heart. He was an active member of the New Jersey Historical Society and took great interest in its proceedings.

—Mr. Henry Wells, one of the pioneers of the express business, died in Glasgow, Scotland, Dec. 10. He was born in New Hampshire in 1805, and when still a young man started an express between Albany and Buffalo. Later he organized the American Express Company, of which he was President until a few years ago. He was interested in other companies, and was one of the founders of Wells, Fargo & Co. He retired from business 10 years ago and has since lived quietly at his house in Aurora, N. Y. His health has been failing of late and his voyage to Europe was taken in hopes of improvement. Mr. Wells had acquired a considerable fortune, a large part of which he used in establishing the Wells Female College at Aurora.

TRAFFIC AND EARNINGS.

Chicago Live Stock Movement.

For the month of November receipts and shipments of live hogs at Chicago have been, for five years:

	1878.	1877.	1876.	1875.	1874.
Received.....	907,029	499,800	569,195	491,393	727,407
Shipped.....	72,172	48,834	70,644	74,428	203,437

Net supply.....	835,457	450,966	498,551	416,765	523,970
Av. weight, lbs.....	268	265	262	256½	244

The receipts this year were 81 per cent. greater than last year, and 24½ per cent. greater than in 1874.

For the eleven months ending with November receipts and shipments of hogs have been, for four years:

	1878.	1877.	1876.	1875.
Receipts.....	5,505,422	3,344,040	3,648,110	3,441,076
Shipments.....	1,201,902	804,702	1,092,229	1,520,439

The receipts this year have been one-half greater than in any of the other three, but the shipments are not nearly in proportion, the increased packing in the West having tended to decrease the packing in the East.

The receipts this year were equivalent to about 700,000 tons of freight; the shipments to 150,000 tons—equivalent in weight to 23,000,000 bushels and 5,000,000 bushels of wheat, respectively.

During the same eleven months this year 989,970 head of cattle were received at Chicago and 595,298 shipped thence. The cattle receipts would make about 62,000 car-loads, the shipments 37,000, or an average of about 185 car-loads received and 111 shipped every day, Sundays included.

Railroad Earnings.

The following are reports for the year ending Sept. 30, 1878:

	Earnings.	Expenses.	Net earn.	Earn. per mile.	P. c. of exps.
Buffalo, N. Y. & Philadelphia.....	\$856,410	\$414,420	\$441,990	\$7,078	48.30
European & N. H. American.....	359,873	230,351	129,522	2,706	64.01
Troy & Greenfield.....	201,108	80,428	120,680	9,577	40.00

Other earnings are reported as follows:

Eleven months ending Nov. 30:

	1878.	1877.	Inc. or Dec.	P. c.
Atchison, Topeka & Santa Fe.....	\$3,605,819	\$2,432,327	I. \$1,173,492	48.2
Bur. Cedar Rapids & No.....	1,402,991	1,120,327	I. 282,664	25.2
Central Pacific.....	16,314,363	15,696,093	I. 618,270	3.9
Chicago & Alton.....	4,345,433	4,147,544	I. 199,889	4.8
Chicago, Mil. & St. Paul.....	7,735,072	7,444,973	I. 290,099	3.9
Chi. & Northwestern.....	13,409,696	11,786,672	I. 1,623,024	13.8
Denver & Rio Gr'de.....	1,032,945	700,239	I. 332,706	47.5
Grand Trunk.....	8,218,701	8,639,913	D. 421,212	4.9
Great Western.....	4,089,078	4,062,395	I. 26,683	0.7
Ill. Central, Illinois lines.....	5,045,782	4,814,922	I. 230,860	4.8
Ill. Central, Iowa lines.....	1,350,764	1,378,440	D. 27,676	2.0
Int. & Gt. Northern.....	1,363,989	1,363,989	I. 39,483	2.9
Kansas Pacific.....	3,446,119	3,036,442	I. 409,677	13.5
Mo., Kan. & Texas.....	2,739,111	2,918,299	D. 179,188	6.1
St. L., Alton & T. H. Bellefonte Line.....	454,044	476,558	D. 22,514	4.7
St. Louis, Iron Mt. & Southern.....	4,037,632	3,974,118	I. 63,514	1.6
St. Louis, Kan. City & No.....	3,038,304	2,891,729	I. 146,575	5.1
St. Louis & South-eastern.....	1,086,768	1,008,005	I. 78,763	7.8
Toledo, Peoria & Warsaw.....	1,155,915	1,015,980	I. 139,935	13.8
Union Pacific.....	11,545,955	11,405,528	I. 140,427	1.2
Wabash.....	4,663,558	4,210,016	I. 453,542	10.8

Ten months ending Oct. 31:

At. Miss. & Ohio.....	\$1,399,324	\$1,452,592	D. \$53,268	3.6
Chicago, Bur. & Quincy.....	11,746,897	10,285,021	I. 1,461,876	14.8
Net earnings.....	5,309,206	4,755,129	I. 554,077	11.7
Hannibal & St. Jo.....	1,674,533	1,707,291	D. 32,758	1.9

Three months ending Sept. 30:

Grand Trunk.....	\$439,361	\$485,102	D. \$45,741	9.4
Net earnings.....	100,963	121,480	D. 20,516	16.0

Month of October:

At. Miss. & Ohio.....	\$201,181	\$193,686	I. \$7,495	3.9
Chicago, Bur. & Quincy.....	1,368,348	1,290,114	I. 78,234	6.1
Union Pacific.....	1,442,662	1,329,172	I. 113,490	10.1
Net earnings.....	1,012,965	782,018	I. 230,947	29.5

Month of November:

Atchison, Topeka & Santa Fe.....	\$456,000	\$335,078	I. \$120,922	30.1
Bur. Cedar Rap. & Northern.....	129,494	138,985	D. 9,491	6.8
Central Pacific.....	1,543,000	1,855,774	D. 312,774	16.9
Chicago & Alton.....	414,239	391,616	I. 22,623	5.8
Chicago & Eastern Illinois.....	75,107	65,345	I. 9,762	15.0
Chi. Mil. & St. Paul.....	809,029	802,027	D. 7,002	9.3
Chi. & Northwestern.....	1,403,728	1,236,412	I. 167,316	13.5
Denver & Rio Gr'de.....	117,363	80,083	I. 37,280	46.5
Ill. Central, Illinois lines.....	483,948	474,012	I. 9,936	2.1
Ill. Central, Iowa lines.....	125,365	144,880	D. 19,515	13.5
Int. & Gt. Northern.....	234,023	184,963	I. 49,060	26.5
Kansas Pacific.....	391,421	364,188	I. 27,233	7.5
Mo., Kan. & Texas.....	288,459	274,184	I. 14,275	5.2
St. L., Alton & T. H. Bellefonte Line.....	51,270	47,063	I. 4,207	8.9
St. Louis, Iron Mt. & Southern.....	533,700	458,075	I. 75,625	16.5
St. L., Kan. City & No.....	312,592	312,338	I. 254	0.1
St. Louis & South-eastern.....	113,053	95,827	I. 17,226	18.0
Toledo, Peoria & Warsaw.....	90,145	90,086	I. 59	0.1
Union Pacific.....	1,084,324	1,022,354	I. 61,970	6.1
Wabash.....	452,740	395,050	I. 57,690	14.6

Week ending Nov. 29:

Gt. Western.....	\$68,933	\$61,739	D. \$7,194	24.9
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Week ending Nov. 30:

Grand Trunk.....	\$177,035	\$202,509	D. \$25,474	12.6
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Grain Movement.

Receipts of grain of all kinds at the eight leading Northwestern markets for the week ending Nov. 30 have been, in bushels, for the last six years:

	1878.	1877.	1876.	1875.	1874.	1873.
4,678,731	3,101,359	2,645,154	3,188,546	2,359,732	2,696,902	

The receipts of the week this year were the largest since October, and much larger than receipts ever have been in any week after October in any previous year.

The shipments from the same markets for the same week have been:

	1878.	1877.	1876.	1875.	1874.	1873.
2,919,174	1,862,943	1,733,990	1,917,619	858,513	1,141,950	

This year the shipments of the week are a little larger than those of the previous week, and unusually larger for the season.

The number of bushels and the percentage of the total of the above shipments which were shipped by rail each year were:

	1878.	1877.	1876.	1875.	1874.	1873.
1,012,737	514,900	1,376,025	1,267,584	414,044	457,419	
34.7 p. c.	27.7 p. c.	79.4 p. c.	66.1 p. c.	48.3 p. c.	40.1 p. c.	

The rail shipments were the largest for six weeks, and nearly one-half larger than for the previous week, though the last is the first week since the advance in the grain tariff from the basis of 30 cents to that of 35 cents per 100 lbs. from Chicago to New York.

The lake shipments are extraordinarily large for the season, as even when the movement has been very active, there is usually but little taken by lake the last week of the season, as is indicated by the following statement of the number of bushels shipped by lake in the week for the past six years:

	1878.	1877.	1876.	1875.	1874.	1873.
1,906,437	1,347,953	357,374	650,035	444,460	684,531	

The season has been milder than usual this year and last, and that may account for the unusually large shipments then.

For the same week ending Nov. 30, the receipts at the seven Atlantic ports have been:

	1878.	1877.	1876.	1875.	1874.	1873.
5,740,942	5,480,035	3,883,986	3,028,624	2,017,561	1,419,523	

The receipts this year are a trifle larger than for the previous week, and would be large at any time of the year. Of the total, 67 per cent. was received at New York, 15.3 at Baltimore, 10.5 at Philadelphia, 3.6 at New Orleans, 3.3 at Boston, 0.2 at Portland and 0.1 per cent. at Montreal. The

New York receipts are the largest since October. Before this year they were never equaled, except in the two last weeks of November last year.

For the eleven months ending with November receipts and shipments of flour and grain are reported as follows by the New York Produce Exchange, flour in barrels and grain in bushels:

Flour:	1878.	1877.	Increase.	P. c.
Northwestern receipts	5,231,284	4,583,070	677,605	14.8
shipments	5,570,499	4,816,407	754,092	15.7
Atlantic receipts	8,839,413	7,619,163	1,240,250	16.3
Wheat:				
Northwestern receipts	82,905,046	49,402,894	33,502,152	67.8
shipments	62,185,775	42,388,722	19,797,053	46.7
Atlantic receipts	101,779,054	42,911,852	58,867,202	137.2
Corn:				
Northwestern receipts	88,582,346	74,070,063	13,912,283	18.6
shipments	77,686,753	66,089,793	11,596,960	17.6
Atlantic receipts	90,404,013	60,651,427	18,752,586	23.3
Grain of all kinds:				
Northwestern receipts	214,786,918	150,699,097	55,087,821	34.4
shipments	169,403,830	133,005,121	35,798,709	26.8
Atlantic receipts	235,071,618	154,191,578	80,880,040	52.5

The totals of grain for the past six years have been:

Northwestern Receipts.	1878.	1877.	1876.	1875.	1874.	1873.
214,786,918	150,699,097	163,901,716	145,412,252	162,079,053	157,399,573	
Northwestern Shipments.						
169,403,830	133,005,121	145,423,066	120,805,090	125,390,702	130,347,311	
Atlantic Receipts.						
235,071,618	154,191,578	154,032,011	130,368,538	133,872,370	118,494,736	

This year's movement is very much greater than that of any other.

The excess each year of the receipts of the seven Atlantic ports, over the amount of shipments from the eight Northwestern markets, which is given as some indication of the course of shipments that pass through without transfer at a Western grain market, have been as follows, that for 1873, however, being in excess of Northwestern shipments over Atlantic receipts:

1878.	1877.	1876.	1875.	1874.	1873.
65,067,778	20,580,457	9,509,005	9,502,848	8,472,608	11,752,575

The increase in the past two years is astonishingly great. For the eight weeks ending Dec. 4, the exports of grain from the seven Atlantic ports were 23,884,772 bushels, against 25,074,267 for the corresponding eight weeks last year. There is an increase of nearly 2,300,000 bushels in wheat, but a decrease of 8,900,000 in corn.

For the week ending Dec. 9 receipts and shipments at Chicago and Milwaukee were:

	Receipts.	Shipments.
Chicago	1,949,164	663,065
Milwaukee	877,300	433,100

Receipts at both places were a little less than in the preceding week; shipments from Chicago fell off one-half, but from Milwaukee they increased nearly a quarter. Flour shipments from Milwaukee were very nearly as great as from Chicago.

Receipts at Buffalo for the same week and the three previous have been:

	Dec. 9.	Dec. 2.	Nov. 25.	Nov. 18.
By rail	506,100	886,300	490,300	435,500
By lake	1,159,627	1,028,500	1,762,237	1,682,850
Total	1,755,727	1,914,800	2,252,537	2,118,350

The receipts by lake are unusually large for a week so late in the season.

For the same week ending Dec. 9 receipts at four Atlantic ports were:

New York	1,444,267	Philadelphia	531,100
Baltimore	812,104	Boston	391,560

Of the receipts at New York 1,158,925 bushels, or 80 per cent. were by rail. At all places except Boston the receipts were smaller than for the preceding week, the aggregate decrease being more than one-third, or 1,733,097 bushels, while the falling off in canal receipts at New York was 1,709,924 bushels. The New York receipts are the smallest since April and smaller than in any week last winter from the middle of January to the middle of April. Philadelphia receipts were also usually larger last winter.

Coal Movement.

Coal tonnages are reported as follows for the eleven months ending Nov. 30, the tonnage in each case being only that originating on the line to which it is credited:

Anthracite:	1878.	1877.	Inc. or Dec.	P. c.
Philadelphia & Reading	4,806,156	6,283,272	D. 1,477,116	23.5
Northern Central, Shamokin Div., and Summit Br. R. R.	725,939	665,562	I. 60,377	9.1
Sunbury, Hazleton & Wilkesbarre	35,790	31,041	I. 4,749	15.3
Pennsylvania Canal	345,727	350,397	D. 4,670	1.3
Div. of N. J., Lehigh	2,131,758	2,008,276	D. 478,518	18.3
Lehigh Valley	3,003,359	3,912,627	D. 909,268	23.2
Penn. & New York	30,118	40,960	D. 10,842	26.5
Del., Lacka. & Western	1,901,830	1,793,034	I. 108,796	9.4
Del. & Hudson Canal Co.	1,927,535	1,680,792	I. 237,733	14.1
Pennsylvania Coal Co.	857,308	953,395	D. 96,087	10.1
State Line & Sullivan	32,773	18,702	I. 14,071	74.5
Total anthracite	15,858,293	18,347,118	D. 2,488,825	13.6
Semi-bituminous:				
Cumberland, all lines	1,570,723	1,449,123	I. 121,600	8.4
Huntingdon & Br'd Top	138,900	128,575	I. 10,325	8.1
East Broad Top	71,717	48,531	I. 9,186	18.9
Tyrone & Clearfield	1,192,536	1,274,521	D. 81,985	6.4
Belleville & Snow Sho	20,361	38,774	D. 12,413	32.0
Total semi-bitu's	2,986,297	2,939,524	I. 46,773	1.6
Bituminous:				
Barclay R. R.	282,567	304,922	D. 22,355	7.3
Allegheny Region Pa. R. R.	186,922	166,551	I. 20,371	12.2
Penn. and Westmoreland gas coal	623,095	679,274	D. 56,179	8.3
West Pennsylvania R. R.	168,071	168,794	D. 723	1.0
Southwest Penn. R. R.	22,763	35,558	D. 12,795	35.9
Pittsburgh Region, Pa. R. R.	395,094	346,281	I. 48,813	14.1
Total bituminous	1,078,512	1,702,380	D. 23,868	1.4
Coke:				
Penn. and Westmoreland	70,385			
West Pennsylvania R. R.	70,300			
Southwest Penn. R. R.	718,278			
Pittsburgh Region, Pa. R. R.	105,815			
Total coke	973,778			

The Lehigh operators give the figures above as a justification of their demand for a larger allotment, claiming that the present apportionment which reduces their tonnage 23 per cent., while the Northern companies show a considerable gain, cannot be just.

The negotiations for the extension of the Anthracite Combination appear to have failed entirely, the representatives of the Lehigh operators refusing to treat further, on the ground that they are not authorized to enter into a new combination, but only to provide for some limitation of production by temporary stoppages of mining.

At the last meeting of the Board of Control, it was de-

cided to add 1,000,000 tons to the December production, making the total for the year 18,000,000 tons, or about 3,000,000 tons less than last year.

Chicago coal receipts to Nov. 30 were 1,670,414 tons; shipments, 266,218 tons.

Actual tonnage passing over the Huntingdon & Broad Top Railroad for the eleven months ending Nov. 30 was:

	1878.	1877.	Inc. or Dec.	P. c.
Broad Top	138,900	128,575	I. 10,325	8.1
Cumberland	156,313	167,591	D. 11,278	6.7
Total	295,213	296,166	D. 953	0.3

Actual tonnage passing over the Pennsylvania & New York road during its fiscal year ending Nov. 30 was:

	1878.	1877.	Decrease.	P. c.
Anthracite	780,796	911,754	130,958	14.4
Bituminous	314,567	340,501	25,934	7.6
Total	1,095,363	1,252,255	156,892	12.5

Of the anthracite last year 449,802 tons were received from the Lehigh Valley, 263,436 from Lackawanna & Bloomsburg, 35,727 from State Line & Sullivan and 31,829 from Pleasant Valley mines.

Cotton Movement.

For the week ending Dec. 6 and the crop year from Sept. 1 to that date receipts of cotton are reported as follows by the Commercial and Financial Chronicle, in bales:

	1878.	1877.	1876.	1875.	1874.
Week	220,748	174,365	187,733	172,901	180,065
Since Sept. 1	1,950,982	1,673,882	2,031,398	1,763,886	1,633,424

The receipts of the week were nearly a fifth greater than those of the preceding week. Of the week's receipts 35 per cent. were at New Orleans—a much larger amount and proportion than in any other week of this crop-year. Galveston follows with 8.4 per cent. For the three months from Sept. 1 to Nov. 29 New Orleans received but 14.3 per cent. this year, against 26.2 per cent. last year.

The exports for the week and crop-year were:

	1878.	1877.	Increase.	P. c.
Week	186,020	91,318	94,702	137.0
Since Sept. 1	1,064,858	743,788	321,070	43.2

Of the exports of the week this year nearly 40 per cent. was from New Orleans, 19 per cent. from Savannah and 17 per cent. from Galveston.

Petroleum Exports.

The exports of petroleum for the 11 months ending with November for the past five years has been, in gallons:

	1878.	1877.	1876.	1875.	1874.
308,158,400	335,678,686	229,889,559	224,063,630	219,457,408	

The percentage of the total exported from each port for the past four years has been:

	1878.	1877.	1876.	1875.	1874.
New York	63.6	71.1	56.6	60.9	
Boston	1.1	1.2	1.6	1.1	
Philadelphia	21.3	13.0	26.3	27.2	
Baltimore	11.5	12.7	15.5	10.8	
Richmond	0.3	1.5			
Portland	6.2	0.4			
Norfolk		0.1			
Total	100.0	100.0	100.0	100.0	

The total exports this year are 8.2 per cent. less than last year, but 34 per cent. greater than in any previous year. The chief part of the price of this article now consists in the transportation and refining; the price of crude at Parker City and Oil City on the 5th was about 2½ cents per gallon; at New York, 5½ cents. The value of the barrels in which it is transported is greater even than that of their contents, when the latter is crude.

Provision Movement.

Exports of hog products for the month of November were 49,535 tons this year, against 30,804 tons last year, showing an increase of 18,721 tons, or 61 per cent. For the last week of the month 81 per cent. of these exports were from New York, 10.7 from Philadelphia, 7.3 from Baltimore, and the other 1.1 per cent. from Boston, Portland, Montreal and New Orleans.

Lumber Movement.

Receipts and shipments at Chicago for 11 months from Jan. 1 to Dec. 3 have been, in thousands of square feet and thousand pieces of shingles:

Lumber:	1878.	1877.	Inc. or Dec.	P. c.
Receipts	1,157,503	1,072,806	I. 84,697	7.9
Shipments	593,718	574,091	I. 19,627	3.4
Shingles:				
Receipts	684,263	504,218	I. 180,045	35.8
Shipments	115,521	157,301	D. 41,780	26.5

Minneapolis shipments of lumber for the 11 months ending Nov. 30 have been, in thousands of feet:

	1878.	1877.	1876.
91,580	127,831		135,736

Saginaw shipments for the same period have been:

	1878.	1877.	1876.
523,804	548,835		455,346

Shipments from Chicago are almost entirely rail (the exception is that the canal takes about as much as a single railroad); Minneapolis shipments are largely down the Mississippi, the rest going chiefly for local supply in Minnesota; Saginaw ships chiefly by lake.

Southwestern Association Rates.

Mr. J. W. Midgely, Commissioner of the Southwestern Railroad Association, announces the following rates, which went into effect Monday, the 9th, as arbitrators applying to all business to Baltimore, New York and Boston, from Missouri River points, that is, Kansas City, Leavenworth, St. Joseph and Atchison, in cents per 100 lbs.:

	Class.	1.	2.	3.	4.	Wheat	Other grains.
To Chicago		75	60	45	31	25	
To St. Louis, East Hannibal or Quincy		55	45	35	25	20	
To Toledo		104	82	62	41	33½	28½

The rate on wheat and flour to Milwaukee is made 27½ cents per 100 lbs., or 2½ cents more than to Chicago, for a haul about one-sixth longer.

East-Bound Freight Rates.

A sharp competition and cutting of rates are reported on flour from Milwaukee, the fight being between the lines by way of Grand Haven and the Detroit & Milwaukee, and that by Ludington and the Flint & Pere Marquette, the rail line by Chicago also taking a hand. On Dec. 9 rates were reported at 54 cents a barrel by Chicago and 50 cents by the other lines, while the regular tariff rate is 70 cents.

This Milwaukee trouble was in a fair way to be settled on Monday, but by this time the cutting of rates in connection with shipments from the West to Europe in connection with steamer lines has become so general that there is no present prospect of getting things under control.

East-Bound Passenger Rates.

The St. Louis trouble has been settled at a meeting of representatives of the companies interested and the old rates have been restored.

THE SCRAP HEAP.

Railroad Manufactures.

Toucey & Buchanan patent interlocking switches and signals have recently been put upon the Northern Central in Baltimore; at the junction of the Baltimore & Potomac and the Western Maryland in Baltimore; in the New Jersey Central yard at Communipaw, and at five draw-bridges on the Long Branch Division of the same road. These signals are made by the Seamless Steel Ware & Frog Co., at Harrisburg, Pa.

Wells, French & Co., of Chicago, having just completed a lot of 1,000 freight cars for the Chicago, Burlington & Quincy Railroad, have begun work on another order from the same company for 800 more. The company itself purposes to build 400 more grain cars at its Aurora shops.

The Paterson (N. J.) Iron Co. recently forged two heavy iron shafts, weighing 30 tons each. They are for a transfer boat for the Central Pacific, to run between Oakland and San Francisco.

The Erie (Pa.) Car Works are running extra time, being pressed to fill orders.

The Baldwin Locomotive Works in Philadelphia are full of work and employ 1,600 men. They are making some light engines to go to Nicaragua and have orders for some heavy freight engines for a railroad in Norway, the first order ever received from that country.

The Billmeyer & Small Co., at York, Pa., recently finished several narrow-gauge cars to go to Brazil.

Porter, Bell & Co., at Pittsburgh, have contracted to furnish two narrow-gauge engines for the Port Huron & Northwestern road.

Atkins Brothers, of Pottsville, Pa., have sold 1,300 tons of iron rails, 30 lbs. to the yard, to the Port Huron & Northwestern Company.

Smith, Vale & Co., of Dayton, O., have just shipped three steam-pumps to the Louisville & Nashville road.

The Atchison, Topeka & Santa Fe is now using cypress piles in renewing its bridges. They are brought from Eastern Arkansas, but it is believed that their greater durability will repay the extra cost.

The Philadelphia & Reading shops, at Reading, Pa., have recently turned out a new passenger engine, which burns anthracite coal-dust or waste, on Mr. Wooten's plan. Several freight engines have been built to burn coal-dust on this road, but this is the first passenger engine.

The Manchester (N. H.) Locomotive Works have been building some engines for the Central Branch, Union Pacific. Pennsylvania Furnace, at Riverton, Ky., has gone out of blast, probably for some time.

Belfont Furnace, at Ironton, O., went into blast recently.

The Thomas Iron Co. has two furnaces in blast at Hoken-danqua and two at Lock Ridge, Pa.

Baird Furnace, at Gore, O., is preparing to go into blast this month.

The Pittsburgh steel firm of Anderson & Passavant will hereafter be Anderson & Co., Mr. Passavant retiring.

The Glendower Iron Works, at Danville, Pa., are running full time, making iron rails for the Pittsburgh, New Castle & Lake Erie and the Shenandoah Valley roads.

Bridge Notes.

The Leighton Bridge & Iron Works, at Rochester, N. Y., has just completed an iron bridge of 110-ft. span over the Huron River at Geddes, Mich., for the Michigan Central road.

A good deal having been said lately about bridges made of old rails, it is noted that Chief Engineer Masson, of the Detroit & Milwaukee, has been using old rails for building culverts for several years, with very good results, getting a cheap and durable short bridge.

Notes.

Sympathizing by-standers (about a man who has been knocked down and stunned by a railway train): "Poor man! Take him to the station—". Injured one (recovering): "Tyek me to th' station! What for, then! If au've done any harm to yo' engine, aw's willing to pay for't!"—*Punch*.

Hark! I hear an Angell sing
"To steal is but a little thing."
And his tones, a ringing, say
"But awful hard to get away
With all got
Gains and not
Be gobbled up some future day."

—*New York Graphic*.

A local correspondent says some of the freight conductors are queer fellows. One, evidently to repel all intruders, has nailed a placard to his saloon on which is inscribed, "This car is loaded with gunpowder." Another, a jolly, come-in-boys fellow, has nailed upon his saloon the following: "This car is loaded with ice-cream and cake." Another (who should be furnished with a refrigerator) has hung out his sign, "Perishable."—*St. Albans (Vt.) Messenger*.

In New England a caboose is generally known as a freight saloon.

Conductor Dade, of the New York, New Haven & Hartford road tendered a slightly intoxicated passenger one of those train tickets the other day according to the rules. It puzzled the

yard-masters' offices. Any employé not wishing to conform strictly to the order is requested to resign, and any violation will be cause for prompt dismissal. The rule is one that should be enforced on all roads, for it would be safe to say that three-fourths of all the injury and maiming could have been avoided by strictly conforming to it."

Fast Time.

The Bound Brook (N. J.) *Rock*, speaking of the fast trains run between New York and Philadelphia by both lines, says: "The celebrated Philadelphia & New York fast express train, No. 107, runs from Philadelphia to Jersey City, a distance of 88.4 miles, in 110 minutes—making three stops and changing engines once. At several places, both on the Delaware & Bound Brook and Central of New Jersey, a speed of a mile in 56, 54 and even 50 seconds is regularly made and maintained. Central New Jersey engines Nos. 141, 143, 77, 139, 136, 138 and 137; Delaware & Bound Brook, 105, 103 and 102, and North Pennsylvania, 51, 49 and 52 all can and do make this time."

"On Thanksgiving morning Central Engine, 141, Steve Winner, engineer, on train 107, ran two miles in *ninety-two seconds*, between Westfield and Roselle. North Penn. engine 49 has run from Bound Brook to Trenton Junction, a distance of 27.1 miles in 30 minutes—start and stop included—with three cars and a Pullman car. Engine 138, Hank Foster, engineer, has frequently run from Elizabeth to Bound Brook—start and stop included—in 19½ minutes, the distance being 18.7 miles. Central Engine 97, Engineer Lo-see, on a special train ran from White House to North Branch, 4.9 miles, in four minutes. Yesterday morning engineer Harry Clinger with North Penn. engine 52, on train 107, made the run from Jenkintown to Bound Brook, a distance of 49.1 miles, in 52 minutes, actual running time."

"The driving wheels of these engines are five feet five or five feet seven, except No. 97, which is five feet ten, and she is considered by the Central roaders the fastest engine—on the Continent."

"So, it will be seen that the 'Flying Dutchman' will have to limber up his pins to keep pace with the 'Flying Jerseyman.'"

Civil Engineers' Club of the Northwest.

A regular monthly meeting was held in the rooms of the Club, in Chicago Dec. 3. Mr. S. S. Greeley presided, and Mr. C. W. Durham acted as Secretary. A paper was handed in from C. H. Tutton, of Eau Claire, Wis., which, owing to the statistical nature of its contents was not read, but referred for publication. It was on the subject of "Economic Height and Minimum Material in Bridges of Various Designs," being a mathematical consideration of the same matter presented in graphic form by Charles E. Emery before the American Society of Civil Engineers.

Prices of Rails.

For steel rails active inquiry and an unsettled market are reported, with prices from \$41 to \$43 per ton at mill. Orders amounting to over 60,000 tons have been divided among the Pennsylvania mills at prices said to average a little over \$42 at mill. Some large orders are said to be held back in hopes of securing lower prices.

In iron rails, heavy sections are reported at \$32.50 to \$33.50, and light at \$35 per ton at mill, with, probably, some reduction to cash buyers. There are many inquiries or small lots, but chiefly on long time.

Old rails in Philadelphia are steady at \$19.50 to \$20 per ton, with very light supply.

Keeping Locomotives at Work.

The Aurora (Ill.) *Beacon* says: "The Chicago, Burlington & Quincy engines, in consequence of the wonderful pressure of business, are compelled to make heavier mileage than ever before. They are kept running almost constantly, by having two or three engineers for almost every machine. When an engine gets in here from the West she receives coal and water, another engineer and fireman are put aboard, and away she goes to Chicago, on freight, bringing back another train in time to recollect and take her regular passenger run westward. And the same course is pursued at Galesburg—new crews running the Middle Division engines on to Burlington, or Quincy, or Peoria, and still others bringing them back in time for their legitimate run eastward. The engine which usually brought the Mendota passenger only to Aurora, now goes on to Chicago, and during the day makes a trip to and from Aurora, and then takes 'Billy' down to Mendota in the evening. The pay-car engine, 141, also hauls a couple of trains daily on the East End (the 38½ miles between Chicago and Aurora), and the greatest possible amount of work is being got out of everything on wheels. Mr. Benson continues to hurry out new engines as fast as possible, but for a few months past they have all been sent to the Iowa Division, and have not tended to relieve the pressure here. When an engine reaches the shop for repairs, after having run only a couple of years, Superintendent Chalender is sometimes inclined to think she has not done very well, until, on looking up her record, he is astonished to find that perhaps she has made over 50,000 [?] miles, and done herself and her builders full credit."

Those who are not familiar with the road will understand this better when the distances are stated, which are 38½ miles from Aurora to Chicago, 125 miles from Aurora to Galesburg, 43 miles from Galesburg to Burlington, 99 miles from Galesburg to Quincy, 53 miles from Galesburg to Peoria, and 45 miles from Aurora to Mendota. The day's work of the Mendota accommodation train thus is 84 to Chicago in the morning, the 77 miles to Aurora and back, and then 84 miles again to Mendota—245 miles in all, and all without any late night running, the first and last runs being intended to accommodate passengers who go to Chicago in the morning and return to sleep at home the same night.

Expanding Tires with Hot Water.

An exchange thus speaks of a method of expanding tires tried in Russia: "In the workshop of the railroad from Moscow to Nijni, the tires of wheels are not expanded by the direct action of fire, but by hot water, before being put on the wheels. With the assistance of a movable crane the tires are plunged into a metallic cistern containing water which is kept boiling by means of steam from a boiler close by. An immersion for ten minutes expands a tire sufficiently to enable it to pass around the wheel. The heat is more uniform and the contraction more regular than when a tire is heated by fire in the usual way. It is said that in six years there was only one case of fracture of the water-heated tires, and only 1 per cent. of them loosened upon the wheel."

A Rough Ride.

There is one conductor on Newburgh coal, running from Port Jervis to Newburgh, who surpasses any conductor on the entire line of the Erie for meanness to his fellow employes. His most recent achievement is related by several railroad men as follows:

Newburgh coal leaving this place Saturday arrive at Newburgh in the evening of the same day. The gangs are then compelled to remain there until the Monday following. Men with families in this village generally get orders to "dead head" to Port Jervis, returning Monday morning in time to take their trains. This gives them the whole of Sun-

dry with their families. Last week Saturday night 11 men were thus placed, and received the necessary orders to return to their homes in this village. They got on the first of two trains to leave Newburgh, and with thoughts of a pleasant Sunday in the bosom of their families laid down to pleasant dreams. The train started. For six or eight feet all went well. Then, as the wheels of the caboose alighted upon another rail, the entire 11 sprang to their feet, thinking a wreck had occurred. They were about to return to their former position when another rail was struck, and "ca-chug" went the caboose again. To the 11 old railroad men the case was now clear. The springs of the caboose had been blocked. The beginning of every rail made this more apparent. All thoughts of sleep vanished from those 22 eyes. The ca-chug, ca-bang, ca-slap continued the whole length of the Newburgh Branch, and, arriving at Greycourt, four of the disgusted roaders changed cars, waiting at the depot for the arrival of a more courteous conductor. The seven others were more anxious to get home, and continued with the spiteful conductor.

And yet continued the ca-chug, ca-slap, ca-bang, ca-whack. Arriving at the summit just west of Middletown the engineer stopped for water. Here did the remaining seven join themselves in a common cause, and marching out of the caboose *en masse*, they removed the obnoxious blocks. The remaining 20 miles were completed in silence and in peace. The seven of that illustrious 11 who left Newburgh last Saturday night are now bathing themselves with liniment. —*Port Jervis Gazette*.

Kind-Hearted Railroad Men.

The mother of George and Lizzie Macey, aged four and six years respectively, died in New York a short time ago. The father placed his five children in the Home for the Friendless of that city. Subsequently, he started George and Lizzie for Ottawa, Ont., via Utica, and went to England with the other three to leave them with their grandmother. The two little ones bound for Ottawa fell asleep on the train and passed Utica, landing at Rochester, where they lost their through tickets. This was about two weeks ago. Kind people in Rochester cared for them and put them in an orphan asylum or some other good place where they were well treated. When the walls were missed a tracer was sent out and their whereabouts was discovered. Conductor Sullivan became a father to the waifs and landed them in Utica yesterday morning, putting them in care of Depot Master Lindsman, who let Miss Franc. Clark, of the telegraph office, entertain them temporarily, and she did it nicely. Boxes of luncheon were packed up, and on application of Depot Master Lindsman, Superintendent Maynard, of the Utica & Black River road, gave the children a pass to Ogdensburg, and commended them to the agent in that city for transportation on the Ottawa & Prescott road. Conductor Unser took the children in charge in a fatherly manner, and will see that they go forward comfortably and safely. Captain Asa Gerolds, of the customs at Prescott, will undoubtedly fill them with cakes and candies, and Captain Macquig, of the Utica & Black River, at Ottawa, will deliver them over to their uncle, George Davis, who will send them to other relatives outside of that city. Who says that orphans have no friends? Railroad men are more frequently maligned than commended by people who would find life unbearable if they had half as many annoyances to endure daily as those whom they criticize. Under an apparently rough exterior they have kind hearts, and no worthy person ever applies to them in vain for relief, as this incident bears testimony. —*Utica Herald*, Dec. 7.

New Propellers for the Ogdensburg Line.

Quayle & Son, of Cleveland, O., have just received from the Western Transportation Company a contract to build two propellers, measuring 265 feet keel, 36 feet 6 inches beam, and 16 feet hold in the shallowest place, and to carry 2,000 tons. The boats are to be ready by June or July. The contract price is not stated.

A Train Wrecker's Sentence.

Some months ago a passenger train was wrecked by obstructions placed on the track of the Philadelphia, Wilmington & Baltimore road near Claymont, Del. One Harley G. Brown, a former employé of the road, was arrested for the crime and his trial has just been concluded. His guilt was clearly proved, but it was pleaded in mitigation that he had no intention of wrecking the train, but meant to flag it and to secure re-instatement on the road as a reward for saving the train. The Court, however, refused to accept this plea, and sentenced him to undergo five years' imprisonment and pay a fine of \$4,000.

A Singular Accident.

The engineer of an express train on the Allegheny Valley Railroad met with a painful accident yesterday afternoon, at a small station about ten miles above Sharpsburg. The train was traveling at a very high speed at the time, when a large quantity of red hot cinder was blown from the smoke stack into the cab. The entire mass struck the engineer in the face, burning him so seriously that the train had to be stopped and assistance summoned. Word was sent to the city and the company's physician was dispatched to the scene on a special engine. The name of the engineer could not be ascertained. —*Pittsburgh Telegraph*, Nov. 30.

A Large Derrick.

There is now in use on the Quebec harbor improvements a derrick of extraordinary size, which is used in connection with the dredging works. It is carried on a platform supported by 10 car-wheels, 33 in. diameter, which run on three temporary tracks of 4 ft. 8½ in. gauge. On the platform is a turn-table 40 ft. in diameter, which carries the post and two arms, with two steam-engines, one of which works the hoisting machinery, the other turning the table. The arms are 110 ft. long, from the centre of the post to the end of the arm. The load carried is from six to seven tons at a lift, and a complete circle can be made in 1½ minutes. The derrick was designed by Col. E. Moore, of the firm of Moore & Wright, contractors for the improvements. Col. Moore some years ago removed the obstruction known as Noonday Rock, near San Francisco harbor.

OLD AND NEW ROADS.

Arkansas Central.—The bondholders who bought this road at foreclosure sale in July of last year, have organized a new company known as the Arkansas Midland Railroad Company. The road is of 3 ft. gauge, and is 48 miles long, from Helena, Ark., on the Mississippi River, westward to Clarendon. By the latest statement made before the sale the old company had a capital stock of \$2,500,000 and the debt consisted of \$720,000 first-mortgage bonds guaranteed by the state and \$700,000 second-mortgage bonds. The bonds were chiefly held abroad. It is stated that the new company will issue no bonds.

Baltimore & Hanover.—Track on this road is now laid from the junction with the Bachman Valley road at Black Rock, Md., to Cramer's, 5½ miles, and the grading is all completed for 11 miles. Work on the grading is progressing well, and three more sections are ready to let, leaving

four sections yet to be let, on which there is some delay in securing right of way.

Boston & Lowell.—It is reported that this company will complete a new line to Nashua, N. H., independent of the Nashua & Lowell, by extending its leased Middlesex Central road from Concord, Mass., westward some four miles to a connection with the Nashua, Acton & Boston road. The extension could be built for a small sum, and the Concord Railroad Company, which leases the Nashua, Acton & Boston, would doubtless be well pleased at the addition to its business. It would, however, divert a considerable traffic from the Boston & Lowell's main line.

Buffalo & Williamsville.—It is proposed to build a narrow-gauge road from Buffalo, N. Y., northeast to the village of Williamsville, about 10 miles. The plan is to build a very light road, the rails to be laid beside the macadamized road now connecting the two places.

Canadian Pacific.—The branch line from Winnipeg, Manitoba, to the Minnesota line at Emerson is now all completed and ready for traffic. It is 63 miles long, and is practically an extension of the St. Paul & Pacific to Winnipeg, the centre of the Red River settlements. It will probably be worked for the present by the St. Paul & Pacific, as negotiations for a temporary lease are in progress.

Central & Montgomery.—About half this new Texas road has been graded and the first lot of iron has been received. The company hopes to have trains running by the end of the year. It is to extend from Montgomery, Tex., to the Houston & Texas Central at Navasota.

Chicago & Lake Huron.—It is reported that Mr. Vanderbilt is negotiating for the purchase of some \$1,200,000 Port Huron & Lake Michigan bonds, which are held in Albany, N. Y., with a view of receiving control of that section of the Chicago & Lake Huron line, as he already holds the Chicago & Northwestern. If he secures these bonds, he will also be able to put a stop to litigation over his Chicago & Northwestern purchase, and to control more completely their line from Chicago to Port Huron, which might be used by the Grand Trunk and the Great Western in place of the Michigan Central.

Chicago & Northwestern.—At a meeting of the directors in New York, Dec. 5, the following statement was submitted for the six months from June 1 to Nov. 30, the first half of the fiscal year.

	1878.	1877.	Inc. or Dec.	P. c.
Gross earnings.....	\$7,923,382	\$7,758,068	L. \$165,314	2.2
Expenses and taxes.....	3,938,968	3,947,946	D. 8,978	0.2
Net earnings.....	\$3,984,414	\$3,810,122	L. \$174,292	4.7
Rentals, interest and sinking fund.....	2,417,847	2,430,599	D. 12,752	0.5
Surplus.....	\$1,566,567	\$1,379,523	L. \$187,044	13.8
December dividend preferred stock.....	753,284	753,284		
Balance.....	\$816,283	\$626,239	L. \$190,044	30.3

On this showing the board resolved to declare a dividend of 3½ per cent. on the preferred stock from the earnings of the six months. It was also resolved to declare a dividend of 2 per cent. on the common stock from the surplus reported at the close of the last fiscal year. A protest against the declaration of any dividend on the common stock was presented by Mr. Rufus Hatch, demanding that no dividend should be paid on the common stock before the dividend of 7 per cent. had been earned and paid on the preferred stock, according to the provisions of the agreement under which the preferred stock was issued. No attention was paid to the protest. The surplus reported from last year was \$508,453, from which the 2 per cent. dividend will take \$299,650.

Chicago, Brazil & Vincennes.—This company has filed articles of incorporation in Indiana for a railroad from Chicago southward, by way of Brazil, to Vincennes, about 210 miles. The capital stock is to be \$1,680,000. The road would be everywhere parallel and close to existing lines.

Chicago, Rock Island & Pacific.—Two new branches of this road, built as feeders to the main line and to open up portions of its land grant to settlement, were opened for traffic Dec. 9. The first is the Atlantic & Audubon Branch which leaves the main line at Atlantic, Ia., 60 miles east of Council Bluffs, and runs northward to Audubon, 26 miles. The other extends from the main line at Avoca, Ia., 41 miles from Council Bluffs, north to Harlan, 14 miles. The two branches are nearly parallel and about 20 miles apart. Both have been built this season.

Corpus Christi San Diego & Rio Grande.—The board has decided to begin work at once on the extension of this road to San Diego, Tex., which is 15 miles beyond the present terminus at Collins.

Detroit & Bay City.—Track on the new branch from Vassar, Mich., west by north to East Saginaw was laid last week to the depot in the latter city, and will be ready for trains in a very short time. The branch is 19 miles long, and gives the company a line from Detroit to East Saginaw 106 miles long, or nearly 15 miles shorter than the existing one by the Michigan Central and Flint & Pere Marquette. The company now has 129 miles of road, the new branch, 19 miles, and the main line from Detroit to Bay City, 110 miles.

Eastern Shore.—In Baltimore, Dec. 10, the United States Circuit Court granted a final decree for the sale of this road, and appointed Samuel M. Felton a trustee to make the sale. The foreclosure has not been opposed by the company. The road extends from the Delaware line at Delmar to Crisfield, Md., 38 miles, being a continuation of the Delaware Railroad. By the latest report there were \$400,000 first and \$180,000 second-mortgage bonds.

East Tennessee, Virginia & Georgia.—At the annual meeting in Knoxville, Tenn., Nov. 27, the stockholders passed resolutions authorizing the board of directors to issue bonds as may be necessary for the purpose of providing for or taking up all the existing bonded debt of the company at or before maturity; also to execute such mortgage or mortgages to secure the bonds, as may be necessary. The object is not to increase the debt, but to consolidate and provide for the various issues of bonds as they mature.

European & North American.—The trustees, Hannibal Hamlin and W. B. Hayford, who are in possession of the Maine section of this road, report as follows for the year ending Sept. 30:

	1877-78.	1876-77.	Inc. or Dec.	P. c.
Gross earnings.....	\$359,873	\$357,912	L. \$1,961	0.5
Expenses.....	230,351	217,504	L. 12,847	5.9
Net earnings.....	\$129,522	\$140,408	D. \$10,886	7.8
Gross earn. per mile.....	2,706	2,691	L. 15	0.5
Net ".....	974	1,056	D. 82	7.8
Per cent. of expenses.....	64.01	60.77	L. 3.24	5.3

All the expenses of the change of gauge have now been paid. The trustees have no floating debt, all their purchases being made for cash, and the pay-rolls settled promptly.

Elberton Air Line.—This road is now completed and

opened for business to its terminus at Elberton, Ga., and freight and passengers are received for all the stations. The road is 45 miles long, extending from the Atlanta & Charlotte Air Line at Tocona, Ga., east by south to Elberton through some of the best settled and most prosperous country in North Georgia. It is said to have been built at a very moderate cost, and chiefly by money subscribed along the line.

Grantsburg, Rush City & St. Cloud.—This company has filed articles of incorporation in Minnesota to build a railroad from Rush City on the St. Croix by way of Cambridge and Princeton to St. Cloud, about 70 miles. It is meant to be an extension of the projected St. Cloud, Grantsburg & Ashland road in Wisconsin.

Gulf, Colorado & Santa Fe.—A meeting of stockholders has been called for Dec. 14 to authorize a loan of \$250,000 to pay off floating debt and complete the road to Richmond, Tex. It is stated that the contract under which the company's bonds were to be taken by Dennistown, Cross & Co., of London, has fallen through, the company having been unable to complete 80 miles of road by Nov. 28, as required by its charter and the contract, owing chiefly to the yellow fever and the strict quarantine at Galveston.

Hagerstown & Oil City.—A mysterious project is being worked up in Somerset County, Pa., and the adjoining regions, for a railroad from Hagerstown, Md., northwest to Oil City, Pa., about 160 miles. It is not only to command at once a great traffic in oil, but also to develop about all the out-of-the-way tracts of coal and mineral land in Western Pennsylvania, if its projectors are to be believed.

Hannibal & St. Joseph.—The New York *World* speaks of this company's finances as follows: "The company's earnings for nine months ending Sept. 30 were \$1,426,245 gross and \$552,402 net; the expenses were \$873,843, or 61.37 per cent. The gross earnings for October were \$248,288, the net earnings not yet completely ascertained; November, with fourth week estimated, about \$200,000. The cash in hand, exclusive of \$4,410 held to await presentation of past-due coupons, is \$187,130 in general account and \$4,968 from proceeds of 'free lands,' i. e., lands not covered by the land bonds. The pay-roll for October is cleared off; the last payments were made on Nov. 22. Supply bills are paid up closely. The company has its paper outstanding as follows: \$24,000 on account of the elevator purchases of last year, about \$44,000 in payment for 1,000 tons of steel rails and other notes under a new car contract. Heretofore the company hired 200 freight cars at a rental of \$10.50 monthly per car. In place of this the company has bought 250 cars, paying \$41 per car in cash, and engaging to pay \$8.10 per car monthly for five years, at the end of which time the cars become its property. These payments can be anticipated at a rebate of 8 per cent. per annum. Of the \$1,000,000 of land bonds, of which the Farmers' Loan & Trust Company is trustee, \$419,000 have not been sold, and the company is not open to offers for them, nor were any of them included in the last drawing. Of the remaining \$581,000 there have been drawn and paid off \$100,000, and \$25,000 are now under notice and advertised, with nearly enough collections on hand to call in \$25,000 more; which will make \$150,000 paid off or notified for payment within the year of their issue."

Illinois Central.—The Land Department reports that during the month of November, 914.84 acres of land were sold for \$7,540.72. The cash collected on land contracts was \$10,250.83.

The traffic on the lines in Illinois was \$483,948, against \$474,011.75 in November, 1877, an increase of \$9,936.25, or 2.1 per cent. There was a decrease on the Iowa Division of \$19,514.90, making the net decrease in both states for the month \$9,578.65.

It is reported that negotiations are in progress with the Wabash for a permanent agreement by which the Wabash will use this road for its Chicago business and give the use of its own road as a St. Louis connection for the Central, thus avoiding the construction of competing lines by either company.

Indianapolis & St. Louis.—Notice is given that the coupons due Nov. 1 on the first-mortgage bonds of this company, the payment of which is not enjoined in the suit of the St. Louis, Alton & Terre Haute against this company, will be paid on presentation at the office of the Treasurer in Indianapolis. The injunction, we believe, applies only to the coupons on such bonds as are held by the companies guaranteeing the lease of the St. Louis, Alton & Terre Haute, and does not apply to bonds held by other parties.

James River & Kanawha Canal.—The stockholders have approved a bill providing for the transfer of their property to the Richmond & Allegheny Railroad Company and have directed the board to urge its passage through the Virginia Legislature.

Louisville, New Albany & St. Louis.—The bondholders, who bought this road at foreclosure sale in June, 1876, have recently filed articles of incorporation in Indiana of a new company by the same name, with \$1,500,000 capital stock. There are about 12 miles of the road in operation in Indiana, from Princeton to Mt. Carmel, and a large sum has been expended in grading in the rough hill country near New Albany.

Mechanicsville & Laurel.—A survey is being made for a railroad from Mechanicsville, in Montgomery County, Md., eastward to Laurel on the Washington Branch of the Baltimore & Ohio. The distance is about 14 miles.

Michigan Central.—It is said that arrangements are being made to extend this company's leased Jackson, Lansing & Saginaw road from its present terminus at Gaylord, Mich., northward to the Straits of Mackinaw. The distance is about 58 miles, and for most of the way the work would be light.

Minnesota Central.—This company, which proposes to build a railroad from Red Wing on the Mississippi River west by south to Mankato, Minn., through the valley of Cannon River, has bought all the property of the Cannon River Improvement Company, which was chartered to construct a slack-water navigation along the Cannon River. The Minnesota Central agrees to carry out this plan and to repay \$10,000 spent by the other company in surveys. It is also provided that the road shall not be consolidated with any other.

Missouri, Kansas & Texas.—The Land Commissioner of this road reports that during the eleven months ending Nov. 30, sales from the land grant were 93,039 acres.

Montclair & Greenwood Lake.—Argument has been heard by the Chancellor of New Jersey on a petition filed by some of the bondholders, asking that the recent sale of this road be set aside and a re-sale ordered. The petition charges that the reorganization of the company was unlawful and void, and that the Purchasing Committee did not execute its trust as representative of the bondholders, but acted in the interest of certain parties. The Chancellor reserved his decision.

Mount Sterling Coal.—This company now has 18 miles of road in operation, extending from Mt. Sterling, Ky., west by south to Frenchburg in Menifee County. It serves several coal mines and is reported as doing a good business. It is of 3-ft. gauge, and is, we believe, laid with strap rails on wooden stringers—at least that was the original intention of the company.

New York Elevated.—Trains on the East Side Line began running Dec. 9 up Third avenue in New York to Eighty-ninth street, a little over a mile above the late terminus at Sixty-seventh street. The time up from South Ferry is 34 minutes, down it is 33 minutes, the distance being about 6½ miles. The work is well advanced on the extension to Harlem, two miles further, and the company promises to run trains through by the end of the year. The super-structure of the branch through Chatham street to the City Hall is now being erected, but the work is necessarily slow and has to be done chiefly at night, so as not to interrupt the great traffic which passes through the street in the daytime.

New York, Lake Erie & Western.—The New Jersey Court of Errors has given a final decision in the long and stubbornly contested case of Jewett, Receiver, against Bowman and Dringer. The suit was begun some three years ago, the defendants being Col. Henry Bowman, then Purchasing Agent of the road, and Sigmund Dringer, a dealer in old iron and scrap, of Paterson, N. J. The suit was brought in equity to recover sums said to be due to the company, and alleged conspiracy on the part of the defendants. Dringer bought for some time all, or nearly all, the scrap iron and old metal sold by the company, and it was charged that new iron, steel and new brasses were sent to him concealed in car-loads of old scrap; that scrap sent to him was under-weighed and under-valued, and that the company was defrauded in other similar ways, its losses in the aggregate being large. The case was tried before the Vice-Chancellor, the amount of testimony taken being enormous. From the Vice-Chancellor's decision an appeal was taken, and the Court of Errors now finally decides that the case as to Bowman shall be dismissed, and directs the appointment of a master in chancery to examine the Erie claims and settle them from the estate of Dringer, which is in the hands of a receiver. Dringer, who was a man of considerable property, is said to have been ruined by the heavy cost of the suit and by the great depreciation in prices of his stock while it has been locked up by the Court. His business has been entirely broken up.

New York Street Railroads.—Additional reports have been filed with the State Engineer of New York by two of the more important street railroad companies of New York city. Of these, the Second Avenue comes into competition with the East Side Line of the New York Elevated Company, but had not felt that competition up to the close of the year covered by the report, which is that ending Sept. 30. The Sixth Avenue line is the one most directly affected by the Metropolitan Elevated road, which is built directly over it for a great part of its length and covers almost exactly the same ground. Some figures from the reports are as follows:

	1877-78.	1876-77.	Inc. or Dec.	P. c.
Second Avenue:				
Passengers carried.....	10,062,560	15,585,576	1,478,984	3.1
Gross earnings.....	\$807,949	\$784,195	1,23,754	3.0
Net earnings.....	237,309	218,348	18,961	22.4
Sixth Avenue:				
Passengers carried.....	10,415,732	17,000,367	6,584,635	3.4
Gross earnings.....	\$848,325	\$892,552	44,227	5.0
Net earnings.....	244,061	200,528	43,533	22.2

The Second Avenue Company has a funded debt of \$1,322,000 and a floating debt of \$371,000, on which it paid \$117,825.64 interest, paying from the balance dividends of 6 per cent. on its capital stock of \$1,199,500, leaving a surplus of \$77,483.33. The previous year it paid 8 per cent. The floating debt was increased from \$20,000 to \$371,000, during the year, partly apparently for land and buildings, that item in its construction account having increased \$145,379.26, while the valuation of cars and horses was decreased by \$66,084.27.

The Sixth Avenue Company largely reduced expenses, securing an increase in net, with a decrease in gross earnings. It has \$416,000 funded and \$550,000 floating debt, on which \$29,120 interest was paid. In 1876-77 it paid 10 per cent. dividends on \$750,000 stock; last year no dividends are reported, but the floating debt was decreased \$150,000, and a surplus of \$65,841.21 left after all payments.

North Park & Wyoming.—This company has been organized in Colorado to build a railroad from Georgetown in that state by way of Berthoud's Pass, the North Park and Bingham's Pass to Laramie, Wyo., and thence by the most direct route to Deadwood in the Black Hills. The capital stock is to be \$3,000,000.

North Wisconsin.—The following circular has been issued by this company:

"Notice is hereby given that on and after the first day of December, A. D., 1878, the North Wisconsin Railway will, until further notice, be operated by the Chicago, St. Paul & Minneapolis Railway Company, under the Supervision of Edwin W. Winter, General Superintendent of the said company."

The road is completed from a junction with the Chicago, St. Paul & Minneapolis near Hudson, Wis., northward to Clayton, 39 miles. Some work is being done on a further extension to secure the land grant.

Ohio & Mississippi.—A suit has been begun in the United States Circuit Court at Springfield, Ill., by certain stockholders of this company, to set aside its purchase of the Springfield & Illinois Southeastern road.

Painesville & Youngstown.—In the United States Circuit Court at Cleveland, O., a decree of sale has been entered against this road and commissioners appointed to make the sale. The road is of 3-ft. gauge, and extends from Painesville, O., to Youngstown, 62 miles. The bonded debt is about \$1,280,000.

Paris & Danville.—Holders of about one-fifth of the bonds have filed exceptions to the confirmation of the sale of this road, chiefly on the grounds that the price obtained was altogether inadequate, and that it was bought in under an understanding with the Wabash Company.

Pittsburgh, Cincinnati & St. Louis.—Notice is given that the holders of the 7 per cent. unregistered coupon bonds of the Steubenville & Indiana Railroad Company, secured by the first mortgage on the undivided one-half interest in the 33 miles of railroad extending from Newark to Columbus, O., can, if they so desire, upon surrender of the said bonds for cancellation, receive in exchange therefor the 7 per cent. general mortgage coupon or registered bonds of the Pittsburgh, Cincinnati & St. Louis Railway Company, secured by mortgage upon the entire property of the consolidated company, extending from Pittsburgh to Columbus, a distance of 193 miles, by application to the trustees, John D. Taylor and George B. Roberts, at the office of the Pennsylvania Railroad Company, No. 233 South Fourth street, Philadelphia.

Sac City & Wall Lake.—This company has been organized to build a branch line from the Maple River road at Wall Lake, Ia., northeast to Sac City, the county seat of Sac County. The distance is about 13 miles, and the Iowa Land Company, which owns the Maple River road, is to furnish the iron as soon as the local company has the road-bed ready for it.

St. Louis, Kansas City & Northern.—It is said that arrangements have been completed to build the long proposed Omaha connection of this road, and that a sufficient amount of bonds has been placed to provide the money needed. About 140 miles of new road will have to be built, from Pattonsburg, Mo., northwest to Council Bluffs.

The amount of bonds said to have been placed is \$2,380,000, a little over \$16,000 per mile on the proposed new road, and the sale is contingent upon the obtaining of a certain amount of local aid along the line. The completion of the road would give this company a line from St. Louis to Council Bluffs 407 miles long. The shortest line from Chicago to Council Bluffs is 488 miles, but St. Louis is 154 miles further from New York than is Chicago.

St. Louis & Southeastern.—Decrees of sale under the consolidated mortgage having been secured, notice is given that bondholders desiring to share in the benefits of any action that may be taken by the committee representing those who have joined in the reorganization agreement, must, on or before Jan. 1, 1879, deposit their bonds with the Continental National Bank in New York, subject to the order of the committee, and pay the assessment of one-quarter of one per cent., as provided by the agreement.

Somerset & Monticello.—It is proposed to build a narrow-gauge road from Somerset, Ky., on the Cincinnati Southern, southwest to Monticello in Wayne County, about 22 miles. It will reach the Kentucky oil field, where some new developments have lately been made.

Southern Minnesota.—A circular announces that this road is now completed and opened for business to Jackson, Jackson County, Minn., which is 25 miles westward from the late terminus at Fairmont, and 217 miles from La Crosse. The 42 miles from Winnebago to Jackson have been built by the Southern Minnesota Extension Company, a distinct corporation, with substantially the same ownership as the old company.

South Mountain.—The trustees under the mortgage on this unfinished Pennsylvania road has obtained leave from the United States Circuit Court to reopen the decree of foreclosure granted in October last, and to file an answer thereto. This action is taken on the ground that many of the bondholders were not aware of the suit or of the decree, and have had no opportunity to protect their interests. The suit was brought by a party claiming to hold \$300,000 bonds out of \$1,018,000 issued, and the company made no opposition.

Tennessee Central.—An effort is now being made to secure stock subscriptions to complete this road, which is nearly all graded from Huntingdon, Tenn., on the Nashville, Chattanooga & St. Louis, westward to Trenton, about 35 miles.

The Storm.—A severe storm of wind and rain passed over the Middle States and New England on Dec. 9 and 10, doing much damage to railroad property. Its effects were first felt in Eastern Pennsylvania, where the Pennsylvania and the Cumberland Valley roads suffered some damage, while further north the Northern Central, the Delaware, Lackawanna & Western and the Lehigh Valley lost considerably from wash-outs and bridges swept away. In New Jersey the Erie and the New Jersey Midland were damaged by high water, and in New York the Hudson River Division of the Central was blocked by several bad wash-outs. In Western Massachusetts and Connecticut the Boston & Albany, the Housatonic and some local roads were sufferers from bad wash-outs and several bridges carried away. The roads in Vermont and New Hampshire felt the storm most of all; wash-outs and lost bridges are reported in every direction, and several bad accidents to trains caused some loss of life.

Union, Bluffton & Northwestern.—This company has filed articles of incorporation in Indiana, for a railroad about 180 miles long, from Union City, Ind., northwest to the Michigan line at a point just north of the town of South Bend.

Valley, of Ohio.—The contract for the grading of the unfinished section of five miles from Canton, O., to New Berlin has been let to James McGuire, of Akron, O. Work on the bridges is reported as progressing well.

Vicksburg & Brunswick.—Arrangements are being made to have this road sold under a judgment granted by the United States Circuit Court for \$80,000, interest on Barbour County (Ala.) bonds, indorsed by the company. The whole amount of these county bonds issued was \$300,000, and they are held chiefly in Savannah and Liverpool. The company has only 21 miles of completed road, from Eufaula, Ala., to Clayton, which is worked under contract by the Central, of Georgia.

Wabash.—It is again reported that this company has decided to extend its line from Toledo to Detroit in order to secure an independent connection with the Grand Trunk. It is said that possibly the new Toledo & Ann Arbor road may be used as part of this connection. Should an entirely new line be built, there will be three parallel lines between the two cities.

Western Union Telegraph.—At a meeting of the Executive Committee in New York, Dec. 11, the following statement was submitted for the quarter ending Dec. 31, December earnings estimated:

Surplus, Oct. 1.....	\$858,881.87
Net earnings for the quarter.....	1,014,795.53
Total.....	\$1,873,677.40
Payment of debt for purchase of Atlantic & Pacific stock.....	\$908,250
Interest on bonded debt.....	107,350
Sinking funds.....	20,000
Construction, etc.....	60,000
	\$1,093,600.00

Surplus.....\$780,077.40
From this the usual quarterly dividend of 1½ per cent. was declared, which will require \$525,896, leaving a balance of \$254,181.40.

ANNUAL REPORTS.

Old Colony.

This company owns and works a system of roads covering nearly all that section of Massachusetts to the eastward of the Boston & Providence road. It owns a line from Boston to Newport, R. I., 67.79 miles; a loop line from South Braintree by Middleboro to Somerset Junction, 37.60 miles; 35.73 miles of short branches connecting with these lines; the Cape Cod Division, from Middleboro to Provincetown.

town, 85.77 miles, with its branches to Wood's Holl, 17.54 miles, and to Hyannis, 4.90 miles; a line from South Braintree to Plymouth, 35.94 miles; a line from Braintree to Cohasset to Kingston, 32.36 miles, making 307.63 miles in all. Of the last-named line 20.81 miles, from Cohasset to Kingston, were acquired during the year by purchase of the Duxbury & Cohasset road, and the earnings of that section are included for only one-half the year covered by the reports, that ending Sept. 30, 1878.

The company also owns one-half interest in the Union Freight Railway, which connects its road with the other lines entering Boston. It owns a controlling interest in the Old Colony Steamboat Company, whose boats run from Newport and Fall River to New York.

The equipment consists of 50 passenger, 15 freight and 7 switching engines; 158 passenger and 27 baggage cars; 345 box, 24 stock, 356 platform and 72 six-wheel stone cars; 514 coal and gravel cars. There was no change during the year.

The balance sheet condensed, is as follows:

Stock (\$21.889 per mile).....	\$6,733,800.00
Bonds (\$18.088 per mile).....	5,504,500.00
Bills and accounts payable.....	584,803.57
Coupons and dividends unclaimed.....	34,665.46
Surplus.....	709,054.67
Total.....	\$13,630,823.70
Construction and equipment (\$37,297 per mile).....	\$11,473,610.40
Real estate.....	287,483.98
Fall River, Warren & Providence R. R.....	348,605.43
Dorchester & Milton Branch.....	36,937.88
Union Freight R. R.....	103,480.00
Improvement account.....	70,000.00
Sinking fund.....	62,880.81
Old Colony Steamboat Co.....	725,500.00
Nantucket & Cape Cod Steamboat Co.....	15,340.83
Assets, cash, materials and receivables.....	502,983.77
Total.....	\$13,630,823.70

The bonded debt was increased by \$236,000, but bills payable decreased \$355,117.97 during the year. The total cost of the Duxbury & Cohasset road, including stock previously owned, was \$132,495.08, chiefly in debts paid and claims canceled. This was only \$6,367 per mile.

The traffic for the year was as follows:

Train mileage:	1877-78.	1876-77.	Inc. or Dec.	P. c.
Passenger.....	877,571	910,894	D.	39.323
Freight.....	315,516	452,085	D.	136,579
Other.....	180,070	24,001	I.	156,069
Total.....	1,373,757	1,392,990	D.	19,233
Passengers carried.....	3,959,023	4,005,501	D.	46,488
Passenger mileage.....	58,845,895	59,628,616	D.	782,721
Tons freight carried.....	631,190	715,134	D.	83,944
Tonnage mileage.....	18,446,307	21,387,713	D.	2,941,406
Av. train-load:				
Passengers, No.....	67.03	65.03	I.	2.00
Freight, tons.....	58.47	47.31	I.	11.16
Cost per mile run.....	\$1.00	\$1.04	D.	\$0.04

Of the passenger mileage 19.0 per cent., and of the freight mileage 35.3 per cent., was of business to and from other roads. The coal tonnage was 106,293 tons, a decrease of 50,020 tons, or 47.1 per cent., from the previous year. The road has a heavy traffic on its main line and a very large suburban traffic on the branches near Boston, but it has a considerable mileage with light traffic. Its average passenger train-load is very large.

The earnings were as follows:

	1877-78.	1876-77.	Inc. or Dec.	P. c.
Passengers.....	\$1,247,529.38	\$1,282,582.97	D.	\$35,053.59
Express, mail and extra baggage.....	103,354.41	103,917.47	D.	563.06
Freight.....	696,706.71	788,383.96	D.	91,677.25
Rents, etc.....	55,871.44	33,147.69	I.	22,723.75
Total.....	\$2,103,461.94	\$2,208,032.09	D.	\$104,570.15
Working expenses.....	1,294,114.96	1,360,871.29	D.	66,756.33
Taxes.....	80,222.73	93,301.46	D.	13,078.73
Total.....	\$1,374,337.69	\$1,454,172.75	D.	\$79,835.06
Net earnings.....	\$729,124.25	\$753,860.34	D.	\$24,735.09
Gross earn. per mile.....	7,073.88	7,698.32	D.	821.44
Net earn. per mile.....	2,453.06	2,628.34	D.	175.28
Per cent. working expenses.....	61.52	61.63	D.	0.11
Per cent. exps. and taxes.....	65.34	65.86	D.	0.52

The disposition of net earnings and the surplus account were as follows:

Net earnings.....	\$729,124.25
Balance of interest account.....	\$322,905.67
Dividends, 6 per cent.....	404,028.00
Total.....	727,023.67
Surplus for the year.....	\$2,100.58
Premiums on bonds sold.....	2,750.00
Surplus, Sept. 30, 1877.....	756,363.40
Total.....	\$761,213.98
Balance charged off and reduction in value of stocks.....	52,159.31
Surplus, Sept. 30, 1878.....	\$709,054.67

Interest paid was \$391,182.06, from which is deducted \$68,186.39 interest and dividends received, leaving \$322,995.67, balance as above.

During the year 1,071 tons steel rails and 136,903 new ties were laid. About 112 miles of track are now laid with steel and it is intended to lay about 15 miles additional each year. There were 9,120 feet new sidings laid. A new iron bridge was built at Quincy. Five new stations and a new car shed at Fall River were built. Two engines and 57 cars were rebuilt.

The traffic has suffered from depression in business in the large iron works on the line and in the manufacturing towns, especially in Fall River, where it was affected by exceptional financial causes. The New York business has been in a very unsatisfactory condition, owing to the excessive competition and cutting of rates, and there is, apparently, no prospect of any improvement, which can come only by mutual agreement.

During the current year \$328,000 long notes fall due, and can be funded at a lower rate of interest.

The report refers at length to the Wollaston accident, which happened after the close of the year, and says, in conclusion: "This is said to be the first fatal accident to a passenger, from circumstances beyond his own control, upon the line of the original Old Colony Railroad since its opening in 1845. After a full examination of all the circumstances, the directors are unable to find that any causes contributed to the accident, except the violation by the men in charge of the freight train of well-known rules. If the rules had been observed, the accident would not have happened. In this conclusion they are confirmed by the investigation of the Railroad Commissioners.

"The loss to the company by this accident cannot now be

estimated. The destruction of property is not less than \$20,000. The directors have taken prompt steps to adjust fairly all reasonable claims for damages, and have already paid considerable sums to various claimants. There still remain many unsettled claims, some of them of large amount, which will be settled whenever reasonable adjustments can be made.

"In view of the expenditures already made to pay these claims, and the calls of a like nature to be met in the early future, the directors consider that it will be the wisest policy of the company to omit the dividend which would otherwise be made in January next, and to apply all the earnings of the road to the liquidation of these claims.

"The finances of the company are in a sound and healthy condition, and dividends can be resumed as soon as the extraordinary expenditures caused by this accident are provided for."

Detroit & Milwaukee.

Receiver Trowbridge has submitted to the Court a final statement covering the whole period of the receivership from April 10, 1875, to Nov. 10, 1878, being three years and seven months. The statement of receipts and expenditures is as follows:

Passengers.....	\$1,311,597.59
Freight.....	1,958,447.65
Mails, sundries and rents.....	153,130.58
Total.....	\$3,423,175.82
Working expenses (80.63 per cent.).....	\$2,760,247.17
Taxes and insurance (4.43 per cent.).....	151,494.07
Total.....	2,911,741.24
Net earnings.....	\$511,434.58

The disposition of these net earnings was as follows:

Net earnings.....	\$511,434.58
Interest on prior bonds, short loans, etc.....	\$176,982.11
New construction and improvements.....	233,491.30
Total.....	410,473.41

Balance.....\$100,961.17

For the period from Jan. 1 to Nov. 10, 1878, the gross earnings were \$311,597.59; expenses and taxes (71.96 per cent.), \$598,376.20; net earnings, \$233,204.49. The Receiver has gradually diminished the proportion of working expenses to earnings, which was, in 1875, 89.98 per cent.; in 1876, 86.08 per cent.; in 1877, 81.04 per cent., and for nine months of 1878, 67.68 per cent. He believes that it can still further be reduced as steel rails and better equipment are provided.

The Receiver's general balance-sheet, condensed, is as follows:

Balance from revenue account.....	\$100,961.17
Stores and fuel on hand April 15, 1875.....	159,599.83
Unclaimed balances, etc.....	4,975.64
S. Barker, Solicitor Gen. Western Ry.....	31,069.71
Receiver's certificate issued.....	242,598.70
Sundry accounts, suspense account.....	18,415.44
Total.....	\$559,610.49
Stores and fuel, Sept. 30, 1878.....	\$35,339.80
Steel rails, etc., chargeable to future years.....	200,329.86
Cost of foreclosure suit.....	60,938.84
Liabilities of company paid.....	217,690.55
Cash, bills and accounts receivable.....	36,291.44
Total.....	559,610.49

Accompanying the report is a statement from Chief Engineer George Masson of the improvements made on the road during the receivership. There was 1,800 tons of iron rails laid in 1875 and since then 9,290 tons of steel rails, leaving only 2,684 tons required to complete the laying of the main line in steel; 329,200 new ties were laid and the ballasting, ditching, etc., much improved. There have been 2.65 miles new sidings laid. Signals have been put up at all stations. About 95 miles of fence have been renewed. Repairs and renewals have been made to stations, including the Detroit freight houses, and some new ones built. Fourteen spans of iron bridge have replaced wood and 56 wooden culverts have been replaced, chiefly with stone arches or iron pipe, and one trestle filled in, besides several new highway bridges built. Several grades have been cut down and curves removed, and a new road built across Saddle-bag Swamp, doing away with some sharp and troublesome curves. All the cuts have been widened and drained.

East Tennessee, Virginia & Georgia.

This company owns a line from Bristol, Tenn., southwest to Chattanooga, 242 miles, with a branch from Cleveland, Tenn., to Dalton, Ga., 28 miles, making 270 miles in all. The company also owns the Cincinnati, Cumberland Gap & Charleston road, from Morristown to Wolf Creek, 40 miles, but its earnings, we believe, are not included. It leases the Memphis & Charleston road, for which a separate report is made. The following figures are from the President's report for the year ending June 30, 1878.

The earnings for the year were as follows:

	1877-78.	1876-77.	Inc. or Dec.	P. c.
Passengers.....	\$305,532.20	\$300,025.65	I.	\$5,506.55
Freight.....	648,293.93	622,519.32	I.	25,774.61
Express and mails.....	63,621.55	68,282.96	D.	4,661.41
Miscellaneous.....	4,784.03	3,221.73	I.	1,562.30
Total.....	\$1,022,231.71	\$994,049.66	I.	\$28,182.05
Expenses.....	612,641.13	608,923.32	D.	3,717.81
Net earnings.....	\$409,590.58	\$385,126.34	I.	\$24,464.24
Gross earn. per mile.....	3,786.12	3,681.66	I.	104.46
Net earnings per mile.....	1,517.07	1,204.17	I.	312.90
Per cent. of exos.....	59.94	67.30	D.	7.36

The report says: "The result of the operations of the year in a revenue point of view have been sufficient to pay the interest on all the indebtedness of the company, a dividend of 3 per cent. upon its capital stock, maintain the physical condition of the property and leave a surplus of \$80,196.79; but it is proper to state that \$55,537.43 of this has been applied to the payment of judgments recovered against the company during the year on old and disputed claims."

The business of the road has suffered from the general disarrangement of southern business, resulting from the yellow fever, while its leased Memphis & Charleston line has suffered still more severely, a large part of its business being stopped for months.

The traffic of the road was as follows:

Train mileage:	1877-78.	1876-77.	Inc. or Dec.	P. c.
Passenger.....	394,191	334,565	I.	59,626
Freight.....	517,708	523,913	D.	6,205
Total.....	911,899	858,478	I.	53,421
Passengers carried.....	76,365	76,365		
Tons freight carried.....	239,054	218,857	I.	20,197
Average rate:				
Per passenger per mile.....	3.85 cts.			
Per ton per mile.....	1.71 "			

During the year there were laid 9 miles of steel and 16 miles of iron rails, and 66,891 new ties; a new iron bridge was built at Mossy Creek; three engines were rebuilt, two postal and 26 freight cars rebuilt. The report recommends

an adherence to the present low rate of dividends until the old rails are all replaced and some other improvements made.

Vice-President McGhee's report says: "As will be seen, we have been able to economize in cost of conducting transportation in consequence of the improved condition of our roadway. The result sustains the wisdom of the directors in encouraging the management to put the road in first-class condition."

"By some it is supposed that the company collects the money from the people and takes it out of the country to be expended, and thus the railroads become a tax on the section along the line. Nothing is further from the fact. Of the entire receipts of the road for the last year only \$335,476.01 was collected from the people of East Tennessee, while we paid out along the line \$497,788.56, showing that we distributed along the line \$162,312.55 more than we received."

Metropolitan Elevated.

The statement of this company to the State Engineer of New York covers only the period of three months and 26 days, from the opening of the road to Sept. 30, the end of the fiscal year. The company had at that date on its five miles of completed road 25 engines and 80 cars. Its capital account was as follows:

Stock.....	\$655,000
First-mortgage 6 per cent. bonds.....	3,000,000
Second-mortgage 7 per cent. bonds.....	4,500,000

Total stock and bonds (\$1,631,000 per mile).....\$8,155,000

Cost of road and equipment is reported at the same amount. The operations of the road were as follows:

Number of passengers carried.....	4,320,348
Earnings from passengers (8.07 cents per passenger).....	\$348,797.85
Interest.....	2,474.97

Total receipts.....	\$351,272.82
Expenses (35.32 per cent.).....	124,072.64
Surplus.....	\$227,200.18

The interest accruing during the same period was about \$165,000.

The expenses, of course, were almost entirely for operating, the structure being new, and only \$1,956.93 are charged for repairs of road. Two persons are reported killed and five injured on the road.

Knoxville & Ohio.

This company owns a line from Knoxville, Tenn., to Carleville, 38 miles. Its report is for the year ending June 30, 1878. The stock and debt are as follows:

Stock (\$28.424 per mile).....	\$1,080,100
Bonds (\$13.158 per mile).....	500,000
Total (\$41,582 per mile).....	\$1,580,100

The work done by the road during the year was as follows:

Train mileage:	1877-78.	1876-77.	Inc. or Dec.	P. c.
Passenger.....	72,444	76,035	D.	3,591
Tons coal carried.....	90,962	83,904	I.	7,058
Tons other freight.....	6,475	8,238	D.	1,763
Total tonnage.....	97,439	92,142	I.	5,297

The earnings for the year were as follows:

	1877-78.	1876-77.	Inc. or Dec.	P. c.
Gross earnings.....	\$92,160.18	\$90,402.58	I.	\$1,757.60
Expenses.....	55,897.26	52,912.03	I.	2,985.23
Net earnings.....	\$36,262.92	\$37,490.55	D.	\$1,227.63

Gross earnings per mile.....	2,425.27	2,379.02	I.	46.25
Net earnings per mile.....	954.29	986.50	D.	32.20
Per cent. of expenses.....	60.68	58.53	I.	2.15

During the year the two engines were both overhauled and improved. About 100 tons of new steel rails and 10 tons of iron have been laid; 14,913 new ties have also been put down, and all the necessary repairs to bridges, trestles, tunnels and timbering made; several miles of the track have been ballasted with flint gravel and broken limestone rock—about half of each; a new siding of 600 feet has been put in at Cane Creek, and a spur track of 300 feet at the company's gravel bank; a chute has also been built at these banks, thus greatly facilitating the loading. The road-bed now embraces 7½ miles of ballasted track, which is not only well maintained, but greatly improved; and the rest of the road-bed is in good shape.

Portland & Rochester.

This road extends from Portland, Me., southwest to Rochester, N. H., 52.5 miles. It is equipped with 7 engines, 13 passenger-train cars, 137 freight, and 26 service cars. It is now in the hands of a Receiver, whose report covers a period of 13 months, from Sept. 1, 1877, to Sept. 30, 1878. The stock and debt are as follows:

Stock (\$12.114 per mile).....	\$636,011
Company's bonds (\$6.667 per mile).....	350,000
Portland City bonds (\$21.904 per mile).....	1,150,000
Floating debt.....	59,455
Total (\$41,818 per mile).....	\$2,195,466

Interest on the company's bonds is in default; that on the Portland bonds is paid by the city.

The passengers and freight carried were as follows, for 13 months this year and 13 months last year:

	1877-78.	1876-77.	Inc. or Dec.	P. c.
Passengers carried.....	118,583	118,175	I.	408
Average per month.....	9,122	9,848	D.	726
Tons freight carried.....	92,002	75,999	I.	16,003
Average per month.....	7,077	6,333	I.	744

Of the passengers, 84,271 were local and 34,312 through; of the freight, 49,708 tons were local, and 42,294 tons through.

The earnings were as follows, also for 13 months this year, against 13 months the preceding year:

	1877-78.	1876-77.	Inc. or Dec.	P. c.
Gross earnings.....	\$148,151	\$133,896	I.	\$14,255
Expenses.....	118,810	109,500	I.	9,310
Net earnings.....	\$29,341	\$24,396	I.	\$4,945

Gross earnings per mile.....	2,822	2,550	I.	272
Average per month.....	235	213	I.	22
Net earnings per mile.....	559	465	I.	94
Average per month.....	43	39	I.	4
Per cent. of expenses.....	80.20	81.78	D.	1.58

The net earnings last year were a little less than 2 per cent. on the bonds. Of the through business of the road the report says: "Until recently no effort has been made to enter into competition for a share of the business destined for Boston and vicinity, we having tried to sustain ourselves with the local, together with the through business between New York and Portland and directly tributary to the through line. Owing, however, to the very sharp competition of the older routes, they making lower rates to shippers to try and induce our local as well as through business to take their routes, the rates obtained on our traffic had become very much reduced. In order to sustain our revenue we were compelled to join the other lines and compete with them for all business, whether destined for Boston or any other point."